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**PROCEEDINGS  
OF  
ARCCIT2013  
II INTERNATIONAL  
CONFERENCE ON  
BUSINESS AND MANAGEMENT**

December 20<sup>th</sup>, 21<sup>st</sup> – 2013

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**PROCEEDINGS OF  
ARCCIT2013  
II INTERNATIONAL  
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**December 20-21<sup>st</sup>, 2013**

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## FOREWORD



**D. K. Mohan Babu,**  
**Chairman,**  
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Bangalore.

December 15, 2013.

I am pleased to learn that the Department of Management Studies-CITech has organised an International Conference on Business & Management, for two days on December 20-21, 2013, in association with the Academic Research Conferences/Publishers, Abu Dhabi.

I would like to congratulate the Director - PG Studies and the entire MBA team for organising the conference and from the Management side, would like to provide every support that may be required for ensuring the success of the same.

I am given to understand that the academic community has responded very well for participating in the conference and I am confident that the deliberations during the conference would enlighten them all, contributing to their professional career.

My best wishes for the grand success of the conference.

**D. K. Mohan Babu.**

## **FOREWORD**

**Dr. L. Suresh**  
**Principal – CITech,**  
Bangalore.

December 15, 2013.

I am happy to learn that the Department of Management Studies – CITech has organised a two days' International Conference on Business & Management – ARCCIT 2013, in association with Academic Research Conferences/Publishers, Abu Dhabi, scheduled to be held on December 20-21<sup>st</sup>, 2013.

While I would like to compliment the entire team of MBA Department for volunteering to organise the conference, I wish to offer any support that may be required from my office for the same.

I am confident that the team would put their hands together to prepare well and execute their plans systematically.

I Wish the conference all the success.

**Dr. L. Suresh**  
**Principal**

## FOREWORD



**Dr. R.Krishna,**  
Director – PG Studies  
CITech, Bangalore.

December 15, 2013

It is with immense pleasure that I write this Foreword for the the Proceedings of the International Conference scheduled to be held on the Friday & Saturday, December 20 - 21, 2013, organised by the Department of Management Studies - CITech, in association with Academic Research Conferences/Publishers, Abu Dhabi.

The Department has initiated a very bold step in organising this International Conference on Business & Management – ARCCIT2013. For the size & age of the department, this is a real challenge and given the encouragement & support by the Management of CITech and the strong professional guidance by Dr. Ravichandran of Academic Research Conferences/Publishers, Abu Dhabi & his team, I am confident that the event will be a grand success and will be a milestone in the history of the department. My compliments to the Team MBA led by the HoD: Prof. Gopalakrishna, for the initiative. It must have been an exhilarating experience to all.

I am informed that the responses are overwhelming from all corners in the form of quality research papers submitted for review/approval for presentation during the conference. I am sure, the Proceedings of the conference will serve as an excellent reference book to the Management teachers the world over. I trust also that this conference will be an impetus to stimulate further study and research in all the areas.

Wishing Godspeed in all the endeavours.

**Dr. R. Krishna.**

## FOREWORD



It gives me great pleasure in writing a foreword to the ' International Conference on Business and Management ' being organized by Academic Research Publishers at Cambridge Institute of Technology , Bangalore , during December 20 – 21<sup>st</sup> ,2013 .

ARC is a pioneer in creating and disseminating knowledge in the field of Business and Management catering to today's global economy and market . They always organize a global platform to publicize and exchange management principles , ideas , concepts and research methods and analysis among academicians , scholars and management student communities . I strongly believe that the conference would not only inspire the delegates who shall come from different parts of the globe , but also enable them to gain much in sharing innovative ideas and research methods .

I am very much confident that the two days ' International Conference on Business and Management ' would prove to be a great success and I would like to express my heartfelt Greetings and Congratulations to the organizers – ARC and CIT Bangalore .

**Dr. S. Jayachandran**  
**Professor and Former Senate Member,**  
**University of Madras.**  
**( By Nomination**  
**His Excellency , The**  
**Governor- Chancellor**  
**Govt. Of Tamilnadu )**



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# ARCCIT2013

## II International Conference on Business and Management

DATE: December 20 & 21<sup>st</sup>, 2013

LOCATION: **Hotel EVOMA, BANGALORE, INDIA**

TIME	AGENDA	PLACE
09:00 - 09:30	<b>REGISTRATION</b>	Hotel EVOMA
09:30 AM 09:30 - 10:45	<p style="text-align: center;"><b>CONFERENCE INNAGURATION</b></p> <p style="text-align: center;"><u>Welcome address:</u> Dr. R. Krishna, Director, CIT, Bangalore</p> <p style="text-align: center;"><u>Introduction of the Chief guest</u> Prof. S. Gopalakrishna, HOD MBA CiTech</p> <p style="text-align: center;"><u>Address by Chief Guest</u> Mr. Bharath Kalyanram CEO, Turquoise Lake Advisory, Executive Coach &amp; Consultant for Business Excellence in IT and Ex-Chief Delivery Officer (CDO), Infinite Computer Solutions Ltd., Bangalore</p> <p style="text-align: center;"><u>Special Address</u> Dr. L Suresh, Principal, CiTech</p> <p style="text-align: center;"><u>Presidential Remarks</u> Shri. D. K. Mohan, Chairman, Cambridge Institute of Technology, Bangalore</p> <p style="text-align: center;"><u>Vote of Thanks</u> Prof. Muralidharreddy, CiTech</p>	Hotel EVOMA
10:45 - 11.00	Tea Time and Academic Exchange	Hotel EVOMA
11:00 - 1:00	Paper Presentation Hall (1)	Hotel EVOMA
1:00 - 2:00	<b>LUNCH BREAK</b>	Hotel EVOMA
2:00 - 5:00	Paper Presentation Hall (1)	Hotel EVOMA
5:45 p.m.	<b>Best Paper Award and Certificate Distribution</b>	Hotel EVOMA



# DAY 1

## Conference Schedule

### Hotel EVOMA –Teak Hall

SESSION CHAIR: **S. S. Appadoo**

Department of Supply Chain  
Management University of Manitoba,  
Winnipeg, Manitoba,  
Canada 20-12-2013, Friday

REF. No.	Hall 1	TIME
1	Economic Development of Gulf Cooperation Countries An Overview <b>Author: Muteb Ahmed Almihbash</b>	11.00-11.15
2	Using the Portals of Social Media in a Connected Universe: Implications for HR <b>Authors: Prof. Suryanarayana and Roshee Lamichhane</b>	11.15-11.30
3	Organizational Culture,Leadership and Performance in Nigeria: Moderating Effect of Ethical Decision Making <b>Authors: MSB Siddiq and Omojola Abiola Abiodun</b>	11.30-11.45
4	Contractors Project Managers Contributions to the Delays in Projects Construction Industry in Gulf Region <b>Author: Dr. Mamoon Mousa Atout</b>	11.45-12.00
5	Corporate Valuation OF Transportation Company <b>Authors: Prof. Gnanendra. M and Prof. Raghu. N</b>	12.00-12.15
6	An Empirical Study on Impact of Employee's Perception towards Performance Management System on Employee Motivation and Job Commitment <b>Author: P. Sangeetha</b>	12.15-12.30
7	An Empirical Study on Eco-Friendly Awareness and Practice Among College Youth <b>Authors: Dr. M.V. Arulalan and R.D. Indumathi</b>	12.30-12.45
8	An Empirical Study on the Personal Care Products usage Purpose among Bengaluru Youth Consumers <b>Authors: A.G. Vijayanarayanan and Dr. A. Anuradha</b>	12.45-1.00
	<b>Lunch Break</b> <b>1.00-2.00 P.M.</b>	
9	Real Option Versus Traditional Methods: R&D Project Selection <b>Authors: Prity Kumari and Dr. Saroj Sinha</b>	2.00-2.15

10	Women-centric inclusive hr policies at workplace- As an empowerment tool <b>Authors: Ms. Roshee Lamichhane and Dr. A. Suryanarayana</b>	2.15-2.30
11.	Empowering rural women through entrepreneurship in <b>India</b> <b>Authors: Ms. Sarah Ahtesham and Dr. A. Suryanarayana</b>	2.30-2.45
12	Job Satisfaction among Indian Lecturers: A Survey Conducted in IBRI College of Technology,IBRI, Sultanate of Oman <b>Authors: V. Manjula , Dr. Nazeer Khan S. and Mohammed Abed Ali</b>	2.45-3.00
	<b>Tea Time and Academic Exchange</b>	3.00-3.15
13	Efficiency of Marketing Channels for Pomegranate in Koppal District of Karnataka <b>Author: G.M. Sudharshan</b>	3.15-3.30
14	"Unveiling Gree Gestures": Snapshot of Indian Companies Sustainability Disclosure Habits <b>Author: Saroj Datar</b>	3.30-3.45
15	Management of innovative technologies: an integrated strategic view and its managerial implications <b>Authors: Dr. A. Suryanarayana and G. Srinivasa Raju</b>	3.45-4.00
16	A SURVEY ON IMPACT OF CELEBRITIES TOWARDS ADVERTISEMENTS <b>Authors: T.V.Ambuli, Dr.A. Anuradha and B.Sriram</b>	4.00-4.15
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18	FINANCIAL ANALYSIS on Sundaram Clayton Limited <b>Author: Dr. Christy Selvarani</b>	4.30-4.45
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20	Objectionable product promotion in Media <b>Authors: Dr. R. Krishna and Mrs. Selvadurgadevi K,</b>	5.00-5.15
21	Research Paper on Consumer Behaviour <b>Author: Chethan Kumar N</b>	5.15-5.30
22	Social, Mobile, Analytics and Cloud (SMAC) Technology as Influence of FDI in Infrastructure <b>Author: Bharathi Muthu</b>	5.30-5.45

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22	Social, Mobile, Analytics and Cloud (SMAC) Technology as Influence of FDI in Infrastructure <b>Author: Bharathi Muthu</b>	

# Economic Development of Gulf Cooperation Countries

## An overview

**Mr. Muteb Ahmed Almihbash**

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### ABSTRACT

The Gulf Cooperation Countries common was launched in the year 2008. The launch of the common market aided in the national treatment of all the six member countries with equal opportunities and gains and all the stumbling blocks that use to stand on the way of the countries in terms of open trade were removed with an effort to create an open market, a market that all members could approach without any barrier that prevented mass investment. The agreement became effective at the beginning of 2008, although earlier in 2003, a custom union was made clear. The union has faced a lot of challenges especially at the time when America signed free trade agreement with other nations cutting across the GCC's agreement. This caused a lot of discontentment between the members hence paralyzing the operations of the union for some good time. The purpose of this paper is to explore the real issues that has succumbed the agreement since its inauguration up to the present moment .

**Key Words** Economic development, fiscal policy, GDP, GCC ,Free Trade

### INTRODUCTION

The major participants and full members of the council include Kingdom of Bahrain, the State of Kuwait, Sultanate of Oman, State of Qatar, the kingdom of Saudi Arabia and the united Arabs Emirates. The major objectives of the union as drawn from its inauguration date include the enactment of same rules and regulations in several diversified fields like trade, finance, tourism, administration etc. The council also had an objective of embarking on the technological advancements in several industries together to promote the production of goods and services in mass (Buitter 2008). They also thought of setting up a similar defense forces as well as developing a scientific research centre that could help the six member states to enhance their tasks especially in trades and development of consumable products. It is under the scope of GCC to establish some business joint

ventures, encourage the cooperation of private sectors and to strengthen their relationship among themselves.

### Instrument of Fiscal Policy

There are three basic fiscal instruments that the government of the day can use to plan for its economic development. These instruments include taxation, the annual or fiscal budget and the public debts. The public debt results from both internal and external borrowings to support the government plans while taxation is the major parameter that the government uses in collection of money from various business ventures. All these have direct influence on government economic development hence prompting the study.

### GCC Economic Development

The creation and establishment of a more perfect union has been a major objective of the Gulf Cooperation Council

since the beginning of its inception at around 1980s. The perfect union is to integrate the economic parameters upon which growth of trade is clinged on. The development of the GCC monetary union has gone in the world records because it is second after the European Monetary Union. However, this union of GCC has been faced with a lot of serious challenges. Going by the dictates of the benefits of the perfect union in terms of monetary, it has helped in the creation of a common currency that signifies unity among the six major member states (Abed 2013; Frankel 2008).

### **Impacts of Fiscal Policy on Economic Development**

The GCC countries are the most homogenous members of the world union because it consists of people of common origin hence they possess a common culture and language. This union of GCC takes the advantage of its oil surplus and therefore it is the main exporter of oil to the major world markets. This oil surplus traces their origin from the five members with an exception of Bahrain. The Gulf Cooperation Council has very flexible labor markets because the oil market has its season in year out. Its demand has never declined. The council members are also very open to trade and import a lot of skilled workforce from first world countries like the United States and have complete factor mobility within its members. This factor is retrieved from the fact that, the major industrial states are the dictates of the world and therefore the GCC unions plus other trade treaties that exist within the boundaries of the world operate under the powerful eyes of the world super powers-the G5 states.

It is also an undisputed fact that most industrial states believe in advanced technology that they have developed themselves for the world to adopt. The GCC member states being at the verge of development therefore solely depend on the

expertise of the big nations like France to get some skills and expertise that they can apply in their day to day endeavors. The GCC nations have already fulfilled their well founded dream of the preconditions for a currency union because they have met the required standards and the accepted standards for a single currency among its members, e.g. proximity, size, changes of products, exchange structure and inflation performance (Frankel 2008).

The member states so far have realized partially unrestricted migration of goods and services, laborers, and capital across the six member states boundaries. The states are also currently working on possible ways on which the overall banking system can be harmonized to incorporate all the six member states with inclusive prudential regulations and supervision. The members of the GCC exclusive of Kuwait have adopted the use of US dollars and a common external tariff that was introduced in 2003. However, a common currency that is not the US dollar is expected to integrate the financial mobility of the six member states as well as to encourage the trade transaction deals amongst them and to instigate a direct foreign investment.

The European Central Bank has offered the GCC with a draft unitary union agreement and statutes on the Gulf monetary Council and the Gulf Central Bank. The member states made a decision and indeed inaugurated a monetary council in the year 2009 that is serving as a transition body to see into how the single currency can operate for the GCC members. The member countries have lengthily and exhaustively discussed and reiterated on issues that touches on inflation, interest rates, the fiscal balance and public debt that are of the same value to the European monetary Union. The two major nations, that is, Qatar and the UAE, are currently facing inflation which destabilizes the operation of the fiscal policy

of GCC to some extent. However, the concerns have been registered and necessary steps are underway and they don't expect the inflation rate to become persistent given the necessary steps and strategies that they are currently putting in place to curb the menace. The inflation rate of the two rising economies has come as a result of the challenges that face their supply chains due to the tremendous speed of putting into practice huge investments and construction projects that the two countries have been trying to cope up with (Laframboise 2013).

The logic behind the formation of the monetary union is the choice of an appropriate rate of exchange era. The GCC countries' choice on the US dollar has served them well and has contributed to a lot of developments that can be accounted for. It is therefore very right to argue that the low inflation rate in the GCC up to the recent past when a turn of events occurred can be pegged on the fact that, the US dollar is a very stable currency worldwide as it is used to calculate the world economic growth rate in terms of GDP. The choice of exchange rate under the spheres of GCC jurisdictional boundaries can be best analyzed by using structural features of the GCC economies, specifically, the significance of oil sector in Gross Domestic Product, exports and government revenue. At the moment, the production of oil and gas yields about a half of the GDP of GCC states and three quarters of their exports to global markets around the world. This clearly shows that the fiscal policy of the member states of GCC can only be drawn in line of the oil exports because the revenues of the member states majorly originated from this.

However, the most orchestrated challenge, which is being faced by the six nations, lies on the diversification of their economies. The present times also call for present challenges especially in the

development of the non-oil private sectors in order to offer or create employment opportunities for the tremendously increasing labor force.

## **MATERIALS AND METHODOLOGY**

The major borne of contention of the study was to determine the progresses that the GCC member states have made since the beginning of time. The parameter that was intended to be examined deeply was the economic improvement of the six nations. The researcher employed a time series just from the inception of the perfect union up to the current moment and therefore the basic information were got from the various data sources e.g. from the article of Cashin (2011). Arriving at the basic conclusions is aided by the determination of Per Capita income and the Gross Domestic Products of the six states as at the present times.

### **Channels of Impacts**

The already slow global recovery has undergone a new challenge and uncertainty weighs heavily on prospects. The euro area challenge heightened in the first half of 2012 and economic crisis has tremendously reduced across the whole world and this gives a clear signal of the tensions in the financial market, very deep fiscal tightening in many different nations and very high innuendos about the medium-term forecasts. It is projected that the hard economic times affects very negatives the economic growth of GCC nations. The further increment of the euro instability will result in a very demeaning failure to avoid the fiscal cliff in America will might result in very important downside risk (Frankel & Saiki 2012).

Going by the history of the availability of oil spills in the GCC nations and the rising oil prices, it is much undoubted to argue that this has led to rapid economic growth of the six GCC nations. The collaboration of the every increasing oil



costs, increased production of oil, more elaborate fiscal policies and reduced interest rates highly supports the growth of the economic activities of GCC hence boosting their economy. The fiscal and external surpluses are large, and the rate of inflation is in a minimal range and all these makes the destinies of the GCC nations to remain focused on positive growth. However, the major world economies still recognize the extraction of hydrocarbons and the ever increasing government expenditure have hiked the oil prices hence making the oil market to be more vulnerable to dynamics of the global markets (Cashin 2011).

The GCC does not face a lot of competition especially from a potential competitor which is the European nations, but the changes in the oil supply and demand is of very much significant to the six nations making up GCC. However, it is projected that a similar world economic recession, like the one of 2009, which resulted into a very sharp drop in oil prices and disruption to capital flow, can knock in the near future for the second time. Despite the fact that most GCC nations have adequate savings to absorb any uncertain and unpredictable shock, a recurrent fall in oil prices could have a lot of detrimental factors to the economic growth of the six member states. The best strategic plan that the GCC states can adopt is the reduction of the overwhelming rate of growth of the government spending in the future years because that is the best way the nations can create a buffer zone which could help prevent any prospect of excessive heating and also improve long-term fiscal position.

In the prediction of the GCC nations, the embedded fiscal tightening and easing monetary policy can help to support the activities of the nations that aim at their economic growth. In superior economies where most nations are striving to reduce their deficit to the minimum possible and

reign in debts, the GCC reorganized and improved by about 75% of GDP in the year 2011 and the same reorganization is available at the stock of the GCC nations in the subsequent years of 2012 and 2013. It is a reality that fiscal positions are generally on a stronger foundation in the third world nations, and for these countries, no trace of significant fiscal positioning whatsoever is projected of them following their adjustment in terms of GDP in 2011 (World Bank 2013).

### **Discussion of GCC Results-Past Records and Future Trends**

There are a lot of reasons that aids in the study and research of economic diversification as it unfolds in the Gulf States. With the exception of Saudi Arabia and Kuwait which have formulated economic planning for nearly 40 years, detailed and well organized economic planning is relatively a modern criteria in the nations of GCC which have published long-term development plans. Within the scope of GCC countries, economic diversification implies that reducing or cutting down heavy dependence of the oil sector by establishing a non-oil revenue sources. It has also meant to the nations that reducing the leading role of the private sector in the GCC economies by promoting the growth and development of the private sector (World Bank 2013).

#### **Kuwait**

In the early 1950s, Kuwait was the most developed nation among the six GCC members according to the rating of the GDPs. And therefore, it had the most promising trajectory of development. However, the country has suffered a lot of setbacks at the brink of lack of political consensus and mutual agreement on how the nation can move forward in terms of development (Mitchell 2005). The political instability that occurred as a result of the war between Iran and Iraq (1980) decreased the proximity of Kuwait and its

attractiveness to open world as a trading hub. The second factor that has contributed to the lagging behind Kuwait is attributed to the impact of the invasion of Iraq following the Gulf War in 1990 and this rendered the nation with poor infrastructure, huge debts and unresolved security situations. This affected the development of Kuwait even with the presence of GCC because it impacted into negative feeling by the private sectors not to invest in the country because of its unstable government which could not even offer its people some guaranteed security (Khaleej Times, 2005).

In the current plans under the help of GCC, the country is attempting to revert to its previous status to open way for opportunities, especially by strengthening its trade relationship with the other five members of GCC to boost its financial activities. This has been done and the work is still under progress to initiate some overdue reforms. The country is currently trying to engage the GCC members in the development of infrastructure, and the enactment of better rules and regulations to make it more attractive for private investors. The nation has a very strong objective that the private sector should be the major driver of its economy if it has to benefit from its good relationship with the other GCC member countries and be able to absorb the ever increasing labor force (Cashin 2011).

### **Oman**

Oman has a very long protracted history of economic planning. Its government of the day in conjunction with the efforts of GCC has enacted the eighth five year development plan (2011-2015) which was made public on 2nd of January 2011. The current few years back also constituted a supreme council for planning whose main responsibility is to prepare the development of plans and fiscal budgets. The nation has put into consideration the refining of petroleum, agriculture, mining

and fisheries so that all these sectors can be used very well to generate income for the government hence helping the growth of economy of the nation. The country's main attribute is on the GCC relations because this is the best avenue that it can be seen in the general face of the world.

### **Qatar**

In around July 2008, Qatar published the long-term plan by the name of Qatar National Vision 2030 and this was followed by the Qatar National Development Strategy 2011-2016 in March 2011. In the plans, the nation has developed a long-term strategy to guide the land use for the infrastructural development, mega projects, housing and industrial operations (Laframboise 2013). The major aim of the vision is to transform Qatar into an advanced country by 2030, a nation that is capable of sustaining its own development and providing a high standard of living for its entire people for generations to come.

### **Saudi Arabia**

Saudi Arabia has the strongest and most elaborate planning among the GCC members. Since the beginning of time, the country has formulated quite a number of strategic plans that could help spur its economic developments. The most recent and latest is the 9th development plan covering 2010-2014. In the year 2004, they published a long-term strategy which covers a time lag between 2005 and 2024. This was done in response of a number of challenges that faced GCC then. These challenges included the emerging challenges of providing productive employment to Saudi national manpower and improving the quality of life because they had a belief that with the launch of a more perfect union between the six nations, all is possible (Barnegat 2012).

## United Arabs Emirates

The United Arab Emirates also have similar objective plans that will help its economy grow by double digits and become a first world country. Following their launch of Vision 2021, the government published the UAE government strategy (2011-2013) which opt to make it a reality an aim of providing safety and security the dispensation of social and economic development and government services to all the seven emirates.

### CONCLUSION

Following the enactment and launch of the GCC in 2003 and its renaissance in 2008, the six member states have afforded to accrue a lot of benefits and developments together. They call it a perfect union given the fact that the six states are the major exporters of oil that is used across the whole globe. The main objective of the nations is to build a lot of opportunities to their citizens so that the countries can economically grow to greater heights like the economies of western nations. It is therefore a bare reality that the benefits of the unions are more than its drawbacks and hence the countries should be more focused on strengthening their relationship so that they can overcome the challenges of 21st century in unity and devoted strength.

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Country	Capital Adequacy ratio		Non-performing Loans		Provisioning Rate	
	2009	2011	2009	2011	2009	2011
Bahrain	19.6	20.3	4.3	4.5	63.9	65.9
Saudi Arabia	16.5	17.3	3.3	2.3	89.8	132.8
UAE	19.9	21.2	4.3	6.2	94.4	67.8
Qatar	16.1	20.6	1.7	1.7	84.5	86.3
Kuwait	16.7	8.5	11.5	7.3	38.3	33.9
Oman	15.5	15.9	2.7	2.4	104.0	120.6

Source: World Bank Report 2013.

#### GCC Countries: Compliance with the Convergence Criteria, end 2010.

country	Budget deficit lower than 3 percent of GDP, or 5 percent when oil prices are weak	Public debt to GDP ratio lower than 60 percent	Foreign exchange reserves in excess of four months' imports	interest rates not higher than two percentage points above the average of the lowest three countries' rates	Inflation not higher than 2 percent above the average rate of the six states <sup>a</sup>
Bahrain	Yes	Yes	No	Yes	Yes
Kuwait	Yes	Yes	Yes	Yes	Yes
Oman	Yes	Yes	Yes	Yes	Yes
Qatar	Yes	Yes	Yes	Yes	No
Saudi Arabia	Yes	Yes	Yes	Yes	Yes
United Arab of Emirates	Yes	Yes	Yes	Yes	No

Source: Cashin 2011

# Using the Portals of Social Media in a Connected Universe: Implications for HR

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## ABSTRACT

There is no arguing that Social Media has changed the way people interact with each other in their personal lives. Today, it is a moot point to even debate the benefits of social media and social networking in organizations-enhanced brand reputation, connections with customers, improved collaboration, spurt in innovation, a boost to the marketing, and the list can go on. Any business worth the salt recognizes that social media has strategic value. Deloitte predicts that by the end of 2013, over 90% of Fortune 500 companies would have partially or fully implemented an enterprise social network. Organizations have woken up to the fact that these interactions trigger new information and insights. Only those entities that are able to harness this energy to drive business processes and decisions will be able to transform their organizations. The aim of these new tools is to enable firms to tap into the collective intelligence of their workforce, in new and faster ways. We need to remember that the shift to social media will soon become a practical necessity. For this, companies need to approach their roll out plans deliberately and involve all stakeholders. The only surest way to protect business organizations is to formulate and use a set of highly informed, clearly articulated, well-communicated, and most acceptable Social Media policies. An attempt is made in this conceptually rich Paper to demystify Social Media and throw open the portals to a connected universe that is just waiting to be tapped. For this purpose, we have chosen to use four themes and each of them would be discussed in four parts. First part focuses on the insights and learning that are available from the success stories of organizations that have implemented their hiring practices in the new way as a part of their talent acquisition efforts. Second part tries to showcase the best practices of firms that have used social media as a new pedagogy of learning and projects the future of social learning in its evolution. The third part delves into the essentials of personal branding and communication to make ourselves relevant to others, in a manner that does justice to our purpose and their need. In the fourth and final part, the Paper shows the road that lies ahead for the adoption, introduction, and scaling up of Social Media.

**Key Terms:** Social Media, Talent Management, Social HR, *Crowdsourcing*, Gamification, Social Learning, and Personal Branding.

## INTRODUCTION

Social Media comprises of social networks like Facebook, professional networks like LinkedIn, and information networks like *Twitter* that are highly people-centric. All these emerged at a time when internet penetration is growing exponentially in India. With 67 million

users in India and growing at the rate of 52% YoY, smart phones are now a ubiquitous part of our day, and often the cause of panic attacks when they run out of battery. We are witness to and are experiencing things that would have sounded unimaginable and futuristic, much like a sci-fi movie with unrealistic stunts. There is already a buzz around

Social Media and we've merely seen the tip of the iceberg. We are indeed in the midst of remarkable times and the possibilities are limitless. We stand at an interesting juncture where technology is evolving at a speed that makes it impossible to predict which mode of interaction would be „in“ two years from now.

Web 2.0 is expected to have enormous potential to change the way people interact and work, offering HR bountiful opportunities to ride this wave and actively participate in this revolution. For HR professionals, the implications are tremendous—we get to impact culture and engagement at unimaginable speeds and levels of influence that we never imagined, but always wished for. Organizations now have access to direct 1-0-1 connect with every single employee, irrespective of how geographically dispersed they are or disparate their roles are. This is tailor-made for us to re-invent our roles and take that much desired seat at the business table. We just need to figure out how to harness this beast or beauty!

Just a bit of party pooper—while the opportunity is real, the hype and mystification is unwarranted. As we delve deeper, we would realize that at its core, Social Media is about conversations and connections happening at an infinitely unimaginable scale and speed. Even by keeping it very simple, we can harness it for terrific business and personal success as HR professionals. Some of the pioneering organizations had already realized the potential of the web for HR professionals, as early as the dial-up days of the Internet. From the collective expertise of early adopters, we get rich perspectives as to what it takes to tap Social Media's full potential to have a good measure and balance. Though crystal ball gazing in isolation can be

delusional, but with the help of insights that are jargon-free and practical, simplistic yet rich, we can make our forays into this Social Media journey and make it really enjoyable. The transition calls for a shift, and it will take time but it is sure to happen. To get the most, we need to experiment, not by just dipping our toes in the water but by diving in and swim to new shores, tweeting, and thinking all the way.

Though people are more aware of Facebook and LinkedIn, other communities and sites such as Google Plus, Slideshare, and Quora would be useful. Content is shaping how people find and connect with each other. Organizations now have to become content creators themselves to remain relevant. They can't rely on paid external media but have to invest in creating "owned media" to showcase the organization's culture in the form of articles, presentations, and videos. It also means that HR needs to "listen" to conversations on the social web about what people are talking about it, its leadership, and even its competitors. To do all this, HR people have to not only embrace but experiment and grow comfortable with it as well. Time has already come to stop talking about it, and to start doing it. In this context, the time is ripe and the need is more than obvious to demystify HR communities' social aspirations as well as Social Media and throw open the portals to a connected universe that is just waiting to be tapped. For this purpose, we have chosen four themes and each of them would be discussed in four parts in this Paper.

First part focuses on the insights and learnings that are available from the success stories of organizations that have implemented their hiring practices in the new way as a part of their talent acquisition efforts. Second part tries to showcase the best practices of firms that

have used social media as a new pedagogy of learning and projects the future of social learning in its evolution. The third part delves into the essentials of personal branding and communication to make ourselves relevant to others, in a manner that does justice to our purpose and their need. Finally, the fourth part shows the road that lies ahead for the adoption, introduction, and scaling up of Social Media.

### **PART-1: TALENT MANAGEMENT (TM) THROUGH SOCIAL MEDIA**

We have entered a new era-where markets and economies are volatile and unpredictable, governments and policy unstable, new businesses emerging and older ones moving into oblivion, business plans and forecasts going haywire. HR people often find themselves with questions that have no right answers and they would soon be realizing that what got them there is not going to get them ahead. The era they live and operate in has the ability to change, very rapidly, the way people and organizations are perceived and valued, which can result in growth or decline, depending on the choices and decisions they make. Jobsites and recruitment agencies were yesterday's headlines. Today, hiring through the power of social media and the key to success for both recruiters and the recruitees lies in their readiness to adopt Social Media and their Social Media Quotient. We can draw on and gain from the success stories and learnings of organizations that have implemented the new way of hiring.

The recruitment landscape in India has evolved immensely in recent times. Traditionally, the core competency of talent acquisition was either outsourced or left to chance but the recent foray into online social communication has created new frontiers. Employers are moving

towards online social and professional networks, not only look for talent but also to build their employer brand among passive talent or employees that are the right fit, employees have to be equally savvy in their ability to communicate online. This section encapsulates the rise of social media as an effective tool in talent acquisition across industries.

However, one should remember that new trends are not a replacement but a useful and additional resource to traditional methods. Building, aligning, and infusing attractive incentives into new strategies will ensure a win-win situation. At the end of the day, the challenge lies in devising and implementing well-thought out TM methods that have the ability to go viral and yet, from a recruiter's standpoint, provide the ability to measure cognitive abilities of potential candidates. The art of hiring heavily depends on a clear understanding of new trends, and decoding what exactly these buzz words mean and how they can be leveraged on a day-to-day basis for hiring needs globally.

If a company is in the leadership quadrant in India and is able to see great opportunity to grow its presence in the international markets, with overseas acquisitions, manufacturing outfits and warehouses in several countries, they can always leverage the power of social networking to the hilt. In this context, it needs to understand the challenge as one of finding talent in these countries. For this, it has to be understood well by local talent. It has to build a framework that would target specific people with specific information and create a forum that will help communicate with it well. Business-oriented social networking sites as the platform are the only solutions that have the potential to change the game from „conservative“ to „viral“.

By getting Career Page, a recruitment advert, global seats, and global job slots, it would be able to put up testimonials, videos, banners, and updates. This in turn, would help its brand to create a buzz in the market place, both within and outside India.

For example, Dell approaches talent directly on social media ever since the advent of the digital age, and has reinforced the emergence of social media as a critical part of the recruitment and employee engagement tool kit. When talent acquisition goes the social way, there is a case for organizations to smartly combine conventional hiring practices with social recruiting. A time has come to integrate social media into the broader talent management agenda, beyond just acquisition and attraction. In the backdrop of growing war for talent at the marketplace, organizations moving online, attracting today's Generation Y employee force becomes an imperative and poses a greater challenge. Keeping in mind the volatile and unpredictable markets and the economies firms need to re-invent the conservative hiring strategy of the company. Concepts like *crowdsourcing* talent to building an impactful employer brand are engaging the HR professionals who need to have rich insights on the war for talent to keep pace with talent pools in unpredictable markets all the more now.

When firms begin to break the traditional mindset and start looking beyond, they would be creating talent pipelines that will allow them to map and stay connected with critical talent, with specific plans to engage their followers more evocatively. Once success starts unfolding before them, they start working on leveraging their respective brands on other relevant platforms, as part of global networking and branding strategy through online media. When they continue to

network, next in line will be to plot returns on investment in all those avenues. While new age talent management is inundated with buzzwords like *crowdsourcing* and building talent communities online. *Gamification* is another trend that is quickly gaining attention. It is the integration of game mechanics and theory into non-game applications and processes in the workplace. This tool is garnering a lot of attention these days with a yearning among hiring leaders globally, to increase engagement rates with their potential talent communities. Through online media, firms are able to leverage their brands on other relevant platforms as part of global networking and branding strategies.

## **PART-2: SOCIAL TECHNOLOGIES AS THE NEW PEDAGOGY OF LEARNING AND DEVELOPMENT (L&D)**

It has become increasingly clear that employees are hooked onto the virtual world. Social networking, micro blogging, and YouTube videos for learning are realities that employees embrace in their personal learning space. We can leverage on this idea and use the same engagement principles and support employees if they are keen on improving their professional qualifications. Social learning involves participating with others to make sense of new ideas, using technology platforms. Supported by social learning, teams of employees from a given company can be made to prepare for improving their professional qualifications. In this direction, to meet this learning goal, one can use chatter, i.e., a kind of internal collaboration platform to provide these engagement opportunities to all the learners. This calls for creating a Professional Qualification Examination Community on the company's internal social platform. That should become the epicenter of all discussions pertaining to the examinations. Participants must be



encouraged to share content, tips, answer questions, and post updates on their own progress. The training room can do the job of watching from the side-lines and moderate wherever and whenever required.

This *peer to peer* information sharing and learning has amazing capacity to add speed to the knowledge sharing process. This has the advantage of groups learning at will while getting questions answered at their workstations. It is no wonder if a strong sense of ownership leads to offline meets of the participants once in a week for an hour or so to discuss key updates and share tips. Any key point made on the online forum involving further deliberation can be brought up in the offline meets. This has one potential opportunity for senior managers to address the participants that can further encourage them to succeed at the examinations.

Similarly, we can use widely popular ***tweetthons*** concept used in Twitter and launch it for the benefit of employees' social learning. As against offline classroom environment, to enable companies to drive engagement within the community and making the learners to respond well, each week, a topic of importance can be picked up and chat sessions can be arranged within the online community. Yet another key mechanics of social learning could be "Gamification through Fastest Finger".

Contests can be launched within these communities that focus on the ability of learners to provide correct answers with speed—a skill that becomes an imperative during examination times as well. A list of questions can be prepared and all the participants may be invited to be part of these events. As the activity gets kicked off, we can expect the response to be absolutely overwhelming. It would be an

exhilarating experience for anyone to see the participants answering questions in the spirit of competition. Not only the winners of the competitions but the learners who are the quickest to provide the correct answer have to be rewarded with goodies and incentives. We can expect evident changes in the way learning gets delivered. Social learning is clearly the most pragmatic and effective way to ensure that participants take ownership and engage in peer learning.

With social media available as a new pedagogy of learning, the role of a Training Professional is set to evolve from being a creator of content to a curator of content. Thus, the entire spectrum of brick-and-mortar learning as well as social learning, and the progressive manner in which learning is experienced is undergoing a sea change. An exciting period is awaiting the L&D function, as it moves from event-based focus to continuous learning focus, finally impacting the 70% and 20% of the 70-20-10 model. Top-notch HR and Learning professionals, passionately engaged in transforming learning in their organizations can now call themselves as students of the subject as it provides continuous learning opportunities to one and all. Companies engaging in social learning are able to witness an evident change in the way learning gets delivered. Social learning is clearly the most pragmatic and effective way to ensure that participants take ownership and engage in peer to peer learning. The key benefits of it are: improved sharing of knowledge, fostered collaboration, provision for informal learning opportunities, ease of finding resources, and relationship building.

Learning is a complex subject as it concerns human beings and every human being is unique and different. Research in

neurosciences has thrown a lot of light on how the human brain works and learns. With more to learn than ever, faster innovation cycles, and reduced training budgets, organizations everywhere are trying to get more from their learning programs. However, to increase the effectiveness of learning, some of our intuitive understanding about learning may need updating. For example, while people generally predict that concentrated learning in one block of time is more effective, neuroscience research is clearly showing that it is far better to break up learning interventions to facilitate successful long-term learning. Social learning in itself may not yet be a mainstay of corporate training departments, at least not as yet-although it has great potential.

In addition to including social media in their service portfolio, managers are now using social media to position themselves strategically as subject matter experts. Social technologies can help learning in a number of ways. They can help create community of fellow learners before they attend training and help them learn from each other's experiences. This would be shifting the focus from competencies needed to people sharing their expertise and strengths. By sharing the content and the theory before the training, face to face time with the facilitators could be used for practice and feedback. The community of learners could form support and ideation groups when they go back to the workplace and implement their learning. This would help reinforce concepts and practical application in the context of the workplace. Managers could also become a part of the community to understand and support their team's learning in the best possible manner and translate it to the workplace. If learning professionals have to leverage social technologies, they must get

comfortable with new skills to become online facilitators and move from „we will build content“ mindset to „we will find the best content and curate it along with facilitation“ mindset. Understanding why people share content online and how to design interactions that help them connect and learn as a community, is the key skill known as „community management“ skills in the digital realm, and L&D professionals need to transfer this offline skill to an online skill.

### **PART-3: MAKING ONESELF RELEVANT TO OTHERS THROUGH PERSONAL BRANDING**

Every interaction that one experiences is an excellent opportunity to create, build, and maintain his or her personal brand. In today's competitive market, building a personal brand is critical to any individual, particularly HR professionals. The world we live in presents everything as an equalizer; the one and the only differentiator is YOU. Creating a personal brand involves showing genuine interest, which radiates outward and engages others. God has made each of us as a first class original and we should not die as a second grade copy. Every individual brings a unique combination of strengths, passions, gifts, and purpose to the workplace, a combination that coalesces into a unique brand. It is this brand that exemplifies the unique him/her, inside as well as outside the organization. We need to underscore the importance and value of having a personal and professional brand in capturing the attention of relevant others. Similarly, as HR professionals acquire new knowledge and competencies, they may find themselves in roles that may not have existed a few years ago. Reinventing one's career in a manner that enables success in the information age depends on creating great content, taking on

leadership roles and having the ability to embrace the quantitative. Indeed, this act is related to the idea of creating a powerful personal brand. An issue that is close to the heart of all HR professionals is to identify and develop the factors that go into creating and making employee brands that attract and resonate with the talent they are trying to attract.

For branding to take place, one has to discover him and allowing the world at large to discover it. The seven steps of building and leveraging one's personal brand are: (i) believe in yourself, (ii) discover yourself, (iii) re-invent yourself, (iv) build yourself, (v) let go of yourself, (vi) renew yourself, and (vii) be yourself. Making ourselves relevant to others, in a manner that does justice to our purpose and need is a real tough challenge indeed. Personal branding is a personal choice, brought alive by many aspects of our behavior, including how we show up online.

With no effort at all, our connections, comments, engagements, or lack thereof, matched with our experience, expertise, and skills, creates a perception that may not represent the true self. To say that we are living in the age of information overload is to grossly understate the issue at hand. The rise in the volume of data, while in and of itself is overwhelming, it is not the core issue. The real challenge arises from our ability to personally and professionally cope with living in this information rich and insights poor environment. In this diverse and overloaded environment, capturing the attention of relevant other stakeholders powerfully is the real challenge. Creating organizations that cut through the noise to resonate with the best talent out there is another such challenge. There is no one or universal answer to these questions centering on employee engagement,

cross-cultural teams, and corporate storytelling and much depends on the frameworks we adopt to find and define our solutions. We need to approach these questions from the lens of branding and communication. And most of the solutions we come across tend to lean towards creating of personal and professional brands and challenges of communication in a global and diverse world.

The single best strategy for demonstrating one's value to others is creating online content-whether it's in the form of blogs, podcasts, videos, or even a smart Twitter feed-it shows he/she is engaged-it shows you are engaged in key discussions and you know what you are talking about. The new frontier for HR is undoubtedly Big Data-embracing the quantitative and adapting its insights into measurable performance gains for one's organization. Many HR professionals are not trained in analytics, but given its growing importance, diving in now and establishing one's expertise may be a smarter way to stay ahead of the curve. As HR, like much of the business world, is rapidly changing, every HR professional has to reinvent himself and his career by projecting the way he wants to be perceived by others. For this, they need to develop insightful content, take on leadership roles, and mastering Big Data. That is the best and the only ticket for his advancement and future professional success.

#### **Part-4: INTRODUCING AND SCALING SOCIAL MEDIA: THE ROAD AHEAD**

For the HR professionals, the challenges are tougher than ever before and understanding and developing human capital effectively is an area ripe for research and experimentation. Social Media survives on the premise of connecting people, ideas, and thoughts and if a product/solution maintains and

builds on the same principle, firms coming up with them in social media space will definitely find it very easy to adapt to changing times and technology. If we can showcase social media products and solutions in this crowded space, we find virtually a deluge of options centering on employee referrals, staffing, rewards and recognition, or performance management work streams, with generous helpings of gamification thrown in. However, HR professionals need to make some sense of the clutter by evaluating them on the three principal parameters viz., robustness of the solutions/products, customer base based on clear value proposition, and sustainability.

They should also be in a position to change their world while dabbling with these technologies and ideas. This is still a very nascent space and the challenge lies not in the tools available in the market place, but in the willingness of HR people to change and their mindset. Social Media will not for sure remain a buzz for long—it will be a way companies do business and interact, and should they continue to do what they did in the email era, they will not be able to harness the full power and potential of Social Media. There is no arguing that social networking has changed the way people interact with each other in their personal lives.

### CONCLUDING COMMENTS

There is no arguing that Social Media has changed the way people interact with each other in their personal lives. It is essential to seek synergies between the social media strategy and the fabric of daily work. If not, employees will see the engagement as an additional task or chore demanded by the Management. This implies two risks—either employees won't use it at all or they will rebel against it and use it inappropriately. Both the results are damaging. A clear set of goals

and expectations such as marketing and customer service is an absolute must in this context. Even if it's a simple goal to develop a brand of a „young“ organization, the goals need to be strategic. Awareness on issues such as being a responsible corporate netizen, accountability to customer interests and privacy, fellow-employee sensitivity can be achieved through campaigns and training. This helps create an evolving culture of „Enterprise Social Media Acceptance“ rather than being driven down as a set of rules. Social Media is still a very nascent space and the challenge lies not in the tools available, but in our willingness to bring about a change in our thinking. It will not remain a buzz for long—it will be a way we do business and interact, and if we continue to do what we did in the email era, we will not be able to harness the full potential of social media.

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# Organizational Culture, Leadership and Performance in Nigeria: Moderating Effect of Ethical Decision Making

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## ABSTRACT

The growing global world of business and economic activities has opened doors of business opportunities for a number of multinational organizations to Nigeria, but making the business successful is always difficult as a result of room for unethical decisions of leadership and role of organizational culture. There is a growing concern in Nigeria among academics and practitioners about how business should behave. The links between organizational culture, leadership and performance have been examined, with little research on the effect of ethical decision making on the link. The present study attempts to fill this gap in the literature. The study assessed the moderating effect of ethical decision making on the relationship between organizational culture, leadership and performance in Nigeria

**Key words:** organizational culture, leadership, performance, ethical decision making

## INTRODUCTION

The global economy and business activities have opened door of opportunity to a number of organizations to venture into the growing economy of Nigeria. The emerging market of Nigeria is one of the growth engines of the world economy hence a rising number of multinationals companies from developed countries are lured by their huge untapped potential. Making the new venture successful is always difficult as a result of unethical leadership and cultural factors, identified as great economy problems that must be tackled (Akinyemi, 2002). As the business world is becoming rapidly and increasingly borderless, new opportunities and challenges in business are created and presented. For effective management practice, there is need for effective cultural collaboration and cultural understanding of leaders. The composition of the Nigerian workforce has changed dramatically since independence, the workforce diversity has brought different cultural values and leadership styles to both

local and multinationals organizations in the country. This has been further added through the globalization of business of foreign and local organizations in Nigeria. Nigeria is the third largest recipient of FDI in Africa after Angola and Egypt, estimated at \$6.1 billion in 2010, down 29% from \$8.65billion in 2009 (UNCTAD, 2011), making the country one of the greatest recipient of FDI in the world. Leadership and culture aspects of management are the focus of many enquiries into the impact of leadership and organizational culture on performance and on cross-border business activities. Studies on leadership and organization culture have attracted considerable interest from both academic and practitioners. Recent interest has focus more on the importance of the leadership role to the success of an organization. The study focuses more specific on the moderating effect of ethical decision making on the relationship between organizational culture and performance, organizational leadership and performance in Nigeria.

Ethical decision making is introduced here as a responsible decision making process. The ruin and scandals experienced by large corporations on the international scene like Enron, Arthur Anderson, and WorldCom, were brought about by cultural failures and ethical decisions of leaders. However in making decisions that influence part or whole organization, at some point leaders, manager, and employee are faced with issues requiring ethical decision because not all business decisions can be covered by company rules and regulations or policies, or by economics and legal rules or general policy. Ethics is a case of integrity and social responsibility; some view it as a mixture of sentimentality and personal opinion that would interfere with efficient running of business. If we consider the popular Enron case, untold hardship, hurt and harm were brought to the lives of thousands of people as a result of it collapse. Considering the harm done to other companies charged and implicated in similar scandals, we will appreciate why ethics is no longer put aside as irrelevant because the significant impact and consequences are too serious. Therefore to avoid and check future Enron, ethical decision making in business must move beyond a narrow concern with stockholders, it must also consider the impact the decision will have on business stakeholders, who is anyone affected for better or worse by decision made within the organization.

Factors affecting organizational performance have always been a concern to scholars and researchers in the field of organizational behavior, these performance factors may be viewed at the individual and organizational level, of which the culture and leadership of the organization are among the elements that are commonly evaluated. Emphasis on organizational ethical decision making has increased because firms are expected to be ethical in

their decision making and because of the numerous global corporate scandals and bad organizational practices by multinational companies in developing countries like Nigeria. A review of literature suggests that performance can be achieved by developing organization culture and leadership. But question regarding the ethical justifications of this link and relationship have always been an unanswered. To fill this existing gap in current literature and an attempt to answer the question, the main objective of the research is to study the moderating effect of ethical decision making on the relationship between organizational culture, leadership and performance in Nigeria. Ethical decision making is a responsibility organization should impact above profit maximization and financial gain objectives in Nigeria.

#### **ORGANIZATIONAL CULTURE, LEADERSHIP AND PERFORMANCE**

One of the primary responsibilities of leaders is to shape an organizations culture. The values and assumptions that leaders bring to an organization have a direct effect on the organization's culture especially in an organizational formative stage (Denison 2010), these include a culture that emphasizes empowerment and capability development; ability to adapt and stay close to the customer; a clearly articulate vision and strategic direction, and stable system and interpersonal process. If leadership develops employees, builds effective groups, and empowers people, the organizational culture is likely to reflect these strengths (Denison 2010). Culture and leadership dimensions are useful tools for comparing their characteristics. Some widely used leadership and culture dimensions were presented by researchers such as Hofstede (1980, 2001); House et al., (2004); and Denison (1990).

## Organizational Performance

Performance is all about achieving the objectives that organizations set for themselves. The objectives of an organization could be financial, for profit-making or non-financial such as spreading awareness among a certain community. According to Doyle (1994), there was no single measure or best measure of organizational performance. Firm adopts different objectives and measurements for organizational performance. Hamel and Prahalad (1989) and Doyle (1994), however, argued that profitability was the most common measurement used for organizational performance in business organizations. Nash (1993) stressed that profitability was the best indicator to identify whether an organization met its objectives or not. Scholars such as Galbraith and Schendel (1983) supported the use of return on assets, return on equity, and profit margin as the most common measures of performance. Some of the financial measures are sales measures, profit measures and growth measures, while the non-financial measures are perceived success, satisfaction and goal achievement. The financial measures are more objective compared to the non-financial measures which are more subjective. Griffin (2003) described organizational performance as the extent to which the organization is able to meet the needs of its stakeholders and its own needs for survival. Therefore, organizational performance should not be fully compare with certain profit margin, high market share, or having the best products as they may be the result from fully achieving the description of performance.

## Leadership and Performance

In managing organization, the relationship and interaction between organizational leadership and performance is an important topic for both scholars and practitioners. Performance is not

determined by culture alone, even the strongest proponents of cultural influence acknowledge performance is influenced by other internal and external factors (House et al., 2004, Hofstede, 2001). Beside culture, a number of factors such as technology, economic, political, and more company-specific factors like strategy, leadership, and structure may influence performance. Leadership is the ability to influence a group of people toward the achievement of goals (Robbins and Coulter, 2001; Lussier, 1990). There must be an appropriate form of behavior to enhance performance in leadership; this might be viewed in terms of the role of the leaders and their ability to achieve effective performance from a group of people. In today's ever changing world, leaders must be able to cope with the increasing volatility and turbulence of the environment due to the globalization era (Fiedler, 1996; Hennessey, 1998). A successful leader must be able to establish trust by giving employees more freedom to act autonomously and make decisions. Leadership must clarify the direction towards the attainment of goals to the employees through communication and encourage them to feel confident and able to take risks in work completion. Leaders have to sustain current performance and growing for the future in the organization. While keeping eyes on performance, leadership encourages creativity, risk taking, skills and innovation in organizational development. The vital role of the leader in shaping performance becomes fundamental to the success of an organization. Organizational performance can be measured by the effectiveness of its leadership. This may includes how leadership effectively communicates and translates the vision and strategy of the organization to its members; how well the organizations goals, objectives, and strategic focus are carried out by its members; and how focused the leadership of the organization is in utilizing



collaboration skills, and the ability to remain flexible in motivating others with an appeal to the common interests of the organization. Motivation is imperative as to how leadership articulates the organizations performance through the needs of others and inspiring them to perform.

Thorlindsson (1987) in his study of Icelandic fishing ships established the relationship between leadership and performance. Avolio, Waldman, and Einstein, (1988) reported that leadership had a significant and positive relationship on financial performance of the organization. Howell and Avolio (1993) in their study found that transformational leadership is significant and positively related to performance. Bycio et al., (1995) in their study reported that leadership has a significant impact on performance. Behling and McFillen (1996) established the link between leadership and performance. Ogbonna and Harris (2000) found that supportive and participative leadership were indirectly and positively linked to performance, and instrumental leadership had an indirect negative effect on performance. Xenikou and Simosi, (2006) supported that transformational leadership have an indirect positive effect on organizational performance. Cemal et al., (2011) reported significant relationship between leadership styles and organizational performance. In this study, leadership is treated as an independent variable. Therefore we argue that:

*Proposition 1: There is a significant relationship between leadership and organizational performance*

### **Organizational Culture and Performance**

Organizational culture has been studied with performance, studies and research on the link between culture and performance is increasing. What connects these studies is a strong belief among researchers that the performance of

organization is attributable, in part to organizational culture. There are scholars and researchers that questioned the culture-performance link, even when sufficient evidence exists to suggest that organizational culture is associated with organizational performance (Ogbonna and Harris, 2000). Denison (1990) found that organizational culture is correlated with financial performance. Kotter and Heskett (1992) in their study found that there is a positive but moderate relationship between culture strength and long term economic performance. Gordon and Di Tomaso (1992) in their study found that culture strength and adaptability are both predictive of short term performance. Denison and Mishra (1995) in their research found that cultural strength was significantly associated with short-term financial performance. Ogbonna and Harris (2000, 2002) in an empirical study reported a positive relationship between organizational culture and performance. Cemal et al., (2011) reported significant relationship between culture and organizational performance. Others are: Rousseau (1990); Calori and Sernin (1991); Marcoulides and Heck (1993). Therefore we argue that:

*Proposition 2: There is a significant relationship between organizational culture and performance*

### **Organizational Leadership, Culture and Performance**

Researchers in the field of organizational behavior have studied the effects of organizational culture on leadership, the practices of leadership on organizational culture (Bass, 1990; Kouzes and Posner, 2002), and the relationship between the two and organizational performance (Ogbonna and Harris, 2000). The crucial and distinctive role of leadership is the manipulation of the organization culture. Leadership is therefore essential in the organization as the organization cultures

develop (Kilman, Sexton and Serpa, 1985). In addition, the growth and survival of an organization depends largely on the shaping of the culture of the organization by the leadership (Bass, 1990); as they also create mechanism for culture development. Organizational culture also shapes and exerts influence on leadership as the organization develops. The interaction between leadership and culture is therefore mutual. There are also significant results from the studies of Hofstede (2001) on the relationship between culture and leadership.

In order to investigate the interrelationship between leadership and culture, as well as their joint effects on performance, Schein (1992) observed the interconnection by looking at the relationship between leadership and culture in the context of the life cycle of the organization. During the process of organizational formation, the leader creates an organization which reflects his/ her values and beliefs, in this sense; the leader creates and shapes the cultural traits of the organization. Brown (1992) observed that good leaders need to develop the skills that enable them to alter aspects of their culture in order to improve their organizational performance. The empirical studies on the relationship between culture, leadership and performance implications have been very few.

However, organizational culture has been found to mediate the relationship between leadership and performance (Ogbonna and Harris, 2000; Cemal et al., 2011). How leader is viewed by customers and employees, as well as how he/ she reacts to problems, resolve crises, reward and punish are all relevant to an organizational culture, the interaction is common, but the precise natures of interaction between leadership, culture and performance have not been fully understood in addition to understanding the ethical

dimension of the relationship. Therefore we argue that:

*Proposition 3: The relationship between leadership and performance in Nigeria is mediated by organizational culture*

### **Moderating effects of Ethical decision making**

Nigeria is an emerging economy in West Africa. It is a society, plagued with high level bribery, corruption, misrepresentation of business financial performance and absence of business ethics. A country listed as one of the highest crude oil producers in the world, yet also listed as one of the poorest countries in the world. Nigeria had consistently been listed as one of the most corrupt countries in the world by Transparency International annual corruption index. The failures and scandals experienced by many organizations in Nigeria as well as in the global world of business were results of unethical culture and decisions of leadership. Culture and leadership in organization are expected to be ethical in decision making processes. However, organizations are daily faced with challenges of unethical business practices, yet, the integrity and future reputations of an organization depend on the culture and leadership of the organization to adapt to the dynamism in the global market. Organization and leadership should be transparent and ethical in their operations and activities above financial gains and profit maximization objectives.

Success and failure stories of organizations based on their culture, leadership and ethical or non ethical practices are common business news. Mathis and Jackson (1999) in a survey consisting of 1300 managers stated that 48 percent admitted to practicing some form of unethical conduct in the work place. According to Tsalikis and Fritzsche (1989), a large number of managers reported that unethical practices occur in business

organizations, and a substantial number reported that they have at times compromised on their personal ethical standards while deciding for the organization. Very little research attention has been devoted to understanding the relationship between organizational culture, leadership and ethical decision making, and the impact that such a relationship may have on the performance of an organization. This is a notable gap in literature because of the absence of comprehensive research studies exploring the moderating effect of ethical decision making on the relationship between leadership and performance, and between organizational culture and performance, though there are numerous references, emphasizing the importance of these concepts in the proper functioning of organizations. As observed in one form or another, in ethical decision making models, the process of ethical decision making is a function and interaction of many personal or individual and organizational factors. Personal or individual characteristics include Machiavellianism, locus of control, values, spirituality, level of management, while organizational factors include ethical climate, ethical leaders.

A review of past literature on the moderating influence of ethical decision making shows that much of the past studies have been directed toward measuring these personal and organizational variables as moderators. According to Granitz (2003), research has tested the significance of these variables as determinants of ethical judgment and intent. Organizational and personal moderators such as ethical climate, ethical leadership, locus of control, gender, spirituality, level of management have been studied by scholars. Moran and Volkwein (1992) demonstrated the relationship between organizational culture and ethical climate. Ethical climate has been examined in a number of studies and found to be a significant moderator. Barnett

and Vaicys (2000) reported that ethical climate moderated the relationship between judgment and behavioral intention. In a study conducted in Canada, O'Keefe (2006) reported that ethical climate moderated the relationship between social dominance orientation and behavior of army personnel. Values as moderator have been the subject of a number of studies. Fischer and Smith (2004) in their findings reported that values moderated the relationship between organizational justice and work behaviors. Others variables of ethical decision making found to be significant moderators are spirituality (Clark, 2004; Adawiyah et al., 2011; Young et al., 2000), locus of control (Holland et al., 2010; Koo, 2009; Marshall, 1995), gender (Avolio et al., 2009; Ishak et al., 2011), and level of management (Nair and Kamalanabhan, 2010). Understanding organizational culture, leadership and ethical decision is a factor for ensuring the success of business transaction. In the present global business world dominated by declining moral and increasing greed, there is a need to study the relationship between organizational culture, leadership and performance with reference to ethical decision making. Hence, there is a profound case to investigate the moderating effect of ethical decision making on this relationship in Nigeria. Therefore we argue that:

*Proposition 4: The relationship between organizational culture, leadership and performance in Nigeria is moderated by ethical decision making*

## CONCLUSION

In past studies encompassing the areas of organizational culture, leadership and performance, adequate evidence exists of a relationship between organizational culture and performance; as well as between leadership and performance, but role of the ethical dimension of these concepts is lacking. As the economy of the world is gradually getting globalized,

organizations with effective ethical practices in the areas of human development will always have sustainable benefits over others. Ethical decision making can be a solid foundation for organizations to build a sustainable competitive advantage for a long –term survival and growth. There are certainly financial and non financial advantages for organizations that promote and flourish within framework of ethical decision making in their organizational culture and leadership, while unethical decision making ultimately leads the organizations to legal, financial and non financial disadvantages. The exploratory analysis and critique of the available literature provide a profound case to examine the moderating effect of ethical decision making from divergent perspectives.

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# Contractors Project Managers contributions to the delays in projects of construction industry in gulf region

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## Abstract

Many construction projects presents a special set of circumstances in which the contractor Project Manager has to focus and concentrate during each task work to make sure that the project will be completed on time, e.g. fast growth in construction projects, unrealistic construction times, the unique architectural features of many project designs, and international contractors firms including a multinational work force .This paper investigates the major factors causing project delay attributed the contractor project manager by demonstrating his duties and roles in avoiding project delay. The results are based on the questionnaires survey combined with interviews carried out with many project managers aimed at identifying the most important causes of delays in civil engineering construction projects in Gulf region from the viewpoint of construction contractors. Results of this study indicated that the Client and the Consultant contribute with the contractor to the causes of delays due to many factors These accumulated factors are considered as the principle reason for the problem experienced at the project construction stage where roles and principles has been identified of project managers has been identified to ensure the project completion without any delay.

**Key words:** *Construction methodology, Contractual obligations, Rules and responsibilities, Resource planning and scheduling*

## BACKGROUND

Opening the construction industry in the Gulf States to competition from foreign Contractors is having an enormous impact on the construction industry in the region, for both the Contractors and the Clients. Many Contractors have become involved in protected contractual disputes and claims, with projects exceeding budget and time targets. Researchers have identified many factors that contribute to project delays, such factors as the lack of experience of incorporating the specifications and conditions of contract to the details and the procedure of the construction process. Bramble B. and Callahan M. (1992) stated that a project may be delayed as a result of

the direct action of major parties or of their failure to act especially if they have a duty to act. Assaf S. and Mohammed A. (1995) studied the causes of delay in large building projects in Saudi Arabia and identified material related delays as the main cause of project delay. Mansfield N. et al. (1994) looked into the causes of delays and cost overruns in public high way and building projects and found that "There was very good arrangement between the professionals surveyed on those factors that could delay and cost overrun. Ajibade A. and Henry A. (2006) identified the sources of delays caused by the Client, the Consultants, the Contractors and Sub-Contractors and those which are not caused

by these parties to the design and construction process. Delays are the most common and costly problems encountered on construction projects. Early identification and mitigating the effects of construction delays has become an integral part of the project life cycle. Even with today's technology and understanding of project management, construction projects continue to suffer from delays; project completion dates frequently become extended. There are many reasons why delays occur such as rework, strike, poor organization, material shortage, equipment failure and so on. In practice, attempts are made to identify the cause of delays and schedules are modified to incorporate the revised project duration. Hensey M. (1993) stated that the main cause of construction delays was material, labor, equipment and financial factors. Scott S. (1997) stated that the main reasons for the project delays are the changes of the contract document, inadequate supervision, late agreement with the Sub-Contractors and insufficient labor. Identifying the various causes that contributes to projects delays is an important step in resolving it. The construction industry needs to develop methodologies and techniques to prevent and more efficiently resolve delay.

### **RESEARCH AIMS AND OBJECTIVES**

This research is primarily concerned with the role of the Contractor's Project Manager in reducing delay on major building projects in Gulf region. This research aims to identify the primary causes for delay in major building projects in GCC and to categorize them in terms of the impacts they have upon the final project completion time. In addition, it aims to identify the root, cause of the delay and the source of the delay contributed by the Contractor. The researcher undertook this research to determine the major factors affecting handing over a project on time. Scott S. (1997) stated that there are of

course, factors other than varied work that may delay the project, and it is also generally recognized that delays may be attributed to the Client, to the Contractor or to neither party. Much information was collected during the study from many sources such as literature review, questionnaire survey and interviews where the literature review provided much information about construction and project management implications and the questionnaires provided the type and causes of the delay for getting the feedback from the respondents to determine the major delay causes. Much information was collected during the study from many sources such as literature review, questionnaire survey and interviews where the literature review provided much information about construction and project management implications and the questionnaires provided the type and causes of the delay for getting the feedback from the respondents to determine the major delay causes. Findings from the questionnaire survey and interviews are used as an indicator to the current situation and the influence and actions that construction project managers can take to in reducing these identified causes of delay.

### **CULTURAL FACTORS**

During the construction period, many different opinions often occur between all the main parties. These may be of a technical nature during construction period or due to a series of factors during design, which combine in various ways to produce arguments, disagreements and ultimately delay. Some of these factors are basic to human interaction, such as the motivating factor of individuals, human behavior, organizational behavior, culture etc, what makes construction contract problem different is the unique nature of the project. In trying to understand why delays occur in construction projects, it is important to realize that the whole process involves the



interaction between parties with different primary objectives. The fast growth of the construction industry in Gulf region, has led to many international Contracting Companies and Design Offices established. Some prefer to have their own Contractor's Project Managers be familiar in the company roles, company policy and procedures. This means that the managers increasingly have to deal with individuals from other cultures and should develop their interactive skills to tackle such problems. Hofstede G. (1984) stated that the most suitable definition of culture could be introduced as the entire heritage of a society transmitted by word, literature. It includes all traditions, habits, religion and language. Foreign Contractor's Project Managers and local Contractor's Project Managers do not have same way of thinking but both have the same target which is handing over the project on time. Because of their different cultural backgrounds, they have different behavior, belief, attitude and values, which reflect how they run the project. The Contractor's Project Managers need to know how to deal with individuals such as the Client, the Consultant, the Contractor, local authorities and the other organizations who are from other different cultures. He must also understand and develop the communication skills, leadership skills, interpersonal skills, flexibility and the technological skills to overcome all the problems. Semple C. *et al.* (1994) confirmed that A very large range of parties involved in construction projects should be properly controlled.

### **Working environment in Gulf region**

The most common Procurement method used in Dubai is the traditional procurement method. It involves the separation of Construction from design. A main contractor is employed to build what the designers or consultants have specified. The basic defining characteristic of Traditional Procurement is that the

Contractor agrees to produce what has been specified in the documents. Consultants acting on behalf of the Client produce the documents and Contractor produces the building. In theory, the Contractor should be invited to price a complete set of documents that describe the proposed building fully. Such documentation demands that the architect (or lead designer) co-ordinates design details from a wide variety of specialists. The result is that the Contractor has no responsibility for design. The contractor's offer of price is based on costs and rates entered in the Bill of Materials, a document that itemizes and quantifies, as far as possible, every aspect of the work. The bill forms not only the pricing document but also, because of its comprehensiveness, an important mechanism for controlling the cost. Common delays caused by Contractor Project Manager Delay in project completion is widely recognized as a major problem in construction, which often leads to costly disputes and acrimonious relationships between the parties involved. The delayed projects will typically produce financial penalties due to the failure of the achieving the construction project goals.

The blame for most project delays is frequently attributed to the Contractor. Some delays could be better controlled or probably avoided by the Contractor. Chan D. and Kumaraswamy M. (1995) concluded other normal factors of the project delays are the project complexity, quality level required, type and style of management, overall organizational structure, types of contract and communication of Project Manager with his staff, consultant and Client. In traditional contracts, the Contractor's responsibility is to build the project according to the contract documentations within the required cost and time budgets and the specified standards. The execution of the contract is administered by the Contractor's Project

Manager who should have the qualified technical staff, enough resources along with a group of experienced subcontractors. One of the major common delays caused by the Contractor is the miss-coordination with the domestic and nominated subcontractors. Naief M. (2002) stated that other causes of delay are attributed to improper management of materials and hampered by lack of explicit and detail model of project materials management process. Chan D. and Kumaraswamy M. (1997) identified five principal delay factors Poor risk management, poor supervision, unforeseen site conditions, slow decision making involving variation and necessary variation works. In the traditional procurement approach, the Contractor's Project Manager is the person who has the overall responsibility for the successful planning and execution of a project. In most of construction projects in Dubai, many factors affect the efficiency and performance of the Contractor's Project Manager of carrying out his duties as it should be to achieve the project targets. Some of these factors according to Anderson W., (1997) are the lack of experience in contract terminologies and wrong interpretation of contract terms, lack of information's in condition of contract (Traditional type), and developing the methodology of the construction of the Project without any assistance from the tender department, The most important person in the project is the Contractor's Project Manager for preparing the detailed working coordinated program and keep up dating it on weekly basis along with the resource.

### **Design of Questionnaire Survey and Data collection**

The questionnaire survey was developed and prepared to evaluate the perceptions of the Contractor project manager to the relative importance of construction delay causes. The objective of the Questionnaire survey is determine the contractor responsibilities The survey was

designed based on 53 Well recognized causes of delay which were obtained through an extensive literature review. Participants were asked to indicate the level of importance of each cause. These causes were categorized into three major groups: Client group relating to factors include finance, payments, Client interference, slow decision and unrealistic contract duration. Consultant group relating to factors include contract management, preparation and approval of submittals and materials and site supervision. Contractors group relating to factors include site management, improper planning, inadequate contractor experience, mistakes during construction, preparing the construction methodology. Questionnaires were sent to the directors, designers, design manager, and technical manager's affairs, project department managers, site managers, chief engineers and construction managers who had long experience in construction industry works. The questionnaire respondents were asked to express their opinion for each delay factor as a percentage, were the maximum percentage representing the maximum severity of delay. The severity clarification used in the research survey results are as shown in Table-1 Ten causes of delays were attributed to the Client; thirteen to the Consultant and thirty to the Contractor. These have been formulated as shown in Table-2 to list the significance of the major factors of each party on project delay. From the results of the questionnaires and the feedback of those who were interviewed their opinions showed great similarity. They suffer from an unrealistic duration of the project, changes of the design during operational process and the progress of the nominated subcontractors on the site. These are the most common problems causing the delay. In addition to these problems there are many problems still participates to the project delay and has to be considered by the project team. From the results of the questionnaires and the feedback of those who were interviewed their opinions showed great similarity. Table-3 shows the Rankings for Causes of Delay by the Contractor and in Table-4: shows the Major Causes of Delay as per Survey Results Analysis Analysis of major

categories of causes of delays caused by the contractor project manager

Referring to Table 1, which shows the scale of severity in the result of percentage considered as the value of severity by assigning the first highest percentage as the highest value, the second highest as to next highest and so on. Value of 5 is considered as 100% severity, value of 4 is considered as 85%, value of 3 is considered as 65% value of 2 is considered as 45% and value of 1 is considered as 25% of severity.

Referring to Table 4, in the last column of the table respondents enter their experience on the severity of impact of each of the tabulated "identified" delay causes from Table 2. This is expressed as a percentage, e.g. a 100% means this factor "always causes delay": a 0% entry means no overall project delay results from this factor. For calculation details:

Refer to Table 4, taking the factor of delay 3.95 which is no. 1 in Contractor category, the average of the respondent's severity weight of the factor is of 79 %. The accumulative points of the 65 respondents is

4108 % points out of a max 65x100

\*  $4108 \div (65 \times 100) = 79\%$  average

(Table 3) row no. 1

Regarding to ranking,

\*  $100\% = 5$

(as mentioned above)

Ranking =  $\frac{79 \times 5}{100} = 3.95$

(Table 4) row no. 1

The average of the severity causes by the Contractor ranging from 81% to 50% percentage wise. In ranking order the percentage could be considered ranging from 5 to 0, where 5 is highest and 0 is the lowest. The highest ranking is of 4.05 and the lowest is of 2.07 as shown in Table 3. In Table 4, factor no. 3.22 (i.e. financing the project by the contractor) and factor no. 3.28 (i.e. preparing the construction

methodology are the major factors of delays caused by the contractor. Table 4 shows the measure of the relative severity of delays in terms of their impact upon the project.

## RECOMMENDATION

The Contractor's Project Manager should be fully aware of the applicable functions and processes throughout the site works and consider the basic concepts, principles, systems and procedures which impact the management functions. Also the Contractor's Project Manager needs to understand the characteristics of the project and technical difficulties in order to deal with many variables which he must consider in successfully delivering the project on time without any delay. Falah M. (1997) stated that The Project Manager of the Main Contractor shall select the Sub-Contractor on the basis of their ability to meet the contract requirement. Schutzel H. and Unruh V. (1996) stated that a lot of questions relates to the work progress (technical, legal, contractual and financial side) must be raised and discussed by all participants during the project progress meetings to avoid conflicts. The following recommended actions should be considered by the contractor project manager to eliminate and avoid the factors attributes to project delay:-

The contractor project manager should be fully aware of the mission, objectives, policies, strengths and weaknesses of the construction firm and its grade at the local market. He should have technical and managerial knowledge of construction, especially method of preparing and planning work procedures of other activities such as MEP works and he should be able to establish the framework of critical activities.

He also should be able to Read, understand and verify the general conditions of the contracts and particular conditions along with drawings, specifications and Bill of Quantities in details, and he has to identify the components of the project in details. He has to determine and analyze the necessary resources to undertake the project by construction planning. He also should

investigate the Client's situation (e.g. whether the project is a private or public, and method of financing for this project). Estimating the extent of the nominated subcontracts in the project and how they are specified in the Bill of Quantities and particular conditions of the contract is a part of his responsibilities. Preparing detailed construction method including testing and commissioning plan is a major task he has to do to implement the strategy of execution. He should outline in details the contractual and technical obligations to mitigate any potential conflict which might arise during construction phase. Finally, he must formulate an executable work sequence based on planning and programming process.

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## TABLES

**Table-1: Severity Weighting Scales in the Research Study**

No.	Severity Weight	Ranks	Scale	Scale Description	Note
1	Maximum severity	5	100%	Direct affect	Immediate delay
2	Very severe	4	85% and above	Always affect	Delay
3	Severe	3	65% and above	Often affect	Causes delay
4	Medium severity	2	45% and above	Sometimes but not always	Possible cause of delay
5	No effect	1	25% and above	Could be neglected	Minor delay
6	Never	0	0% and above	Ignored	No delay

**Table-2: Identified Delay Factors Attributable to the Contractor.**

Source	No.	Factors, Reasons and Causes of delay
Contractor	3.1	Organization chart
	3.2	Technical professionalism in the organization
	3.3	External and internal communications
	3.4	Coordination with sub contractors
	3.5	Centralization with top management
	3.6	Level of mobilization and first site survey
	3.7	Qualification of contractor staff
	3.8	Planning, scheduling and resources
	3.9	Level of quality control
	3.1	Site is very congested
	3.11	Mistakes during construction
	3.12	Similar projects and contractors experience
	3.13	Shortage of materials
	3.14	Quality of Materials
	3.15	Materials Specifications
	3.16	Delay of Delivery
	3.17	Shortage of manpower
	3.18	Skill of manpower
	3.19	Productivity of manpower
	3.20.	Availability of equipments on request
	3.21	Allocation of equipments on site
	3.22	Financing the Project by Contractor
	3.23	Payments of Sub-Contractors
	3.24	Weather conditions
	3.25	Site investigation by Contractor & unforeseen ground conditions
	3.26	Different nationalities of workforce on site
	3.27	Problems with neighbors
	3.28	Preparing the method statement for each work activity
	3.29	Roles of work permits
	3.3	Traffic restrictions

**Table-3: Rankings for Causes of Delay by the Contractor**

<i>Cause of Delay. (See Table 6-1 For details*)</i>	<i>Respondent Rating</i>	<i>Severity Rating (0 to 5)</i>	<i>Order of Importance</i>	<i>NOTE</i>
3.1	79%	3.95	2	
3.2	50%	2.65	14	Lowest
3.3	79%	3.95	2	
3.4	68%	3.3	6	
3.5	66%	3.4	8	
3.6	70%	3.5	4	
3.7	65%	3.15	9	
3.8	63%	3.2	11	
3.9	64%	3.2	10	
3.1	64%	3.2	10	
3.11	76%	3.8	3	
3.12	63%	3.15	11	
3.13	66%	3.3	8	
3.14	65%	3.3	9	
3.15	74%	3.7	4	
3.16	67%	3.35	7	
3.17	67%	3.35	7	
3.18	61%	3.05	11	
3.19	62%	3.1	12	
3.2	64%	3.2	10	
3.21	68%	3.4	6	
3.22	80%	4	1	Highest
3.23	72%	3.7	3	
3.24	67%	3.35	7	
3.25	64%	3.2	10	
3.26	60%	3	12	
3.27	66%	3.3	8	
3.28	81%	4.05	1	
3.29	69%	2.07	5	
3.3	57%	2.85	13	

\*Note: 3.1 refers to the number for the "Incomplete contract documents" cause of delay listed in Table 6-1.

**Table-4: The Major Causes of Delay as per Survey Results Analysis**

Category		Major Causes of Delay	Ranking	Severity Weight %
Contractor	1	Preparing the method statement for each work activity	4.05	81
	2	Financing the project by the Contractor	4	80
	3	Organization Chart	3.95	79
	3a	Communication Externally & Internally	3.95	79
	3b	Mistakes during Construction	3.8	76
	3c	Materials specifications	3.7	74
	3d	Payments of Sub-Contractors	3.6	72
	4	Level of Mobilization & First Survey	3.5	70
	4a	Allocation of equipment's on site	3.4	68
	5	Delay of delivery	3.35	67
	5a	Shortage of manpower	3.35	67
	6	Centralization with top management	3.3	66
	6a	Shortage of materials	3.3	66
	6b	Neighbours problems	3.3	66
	7	Qualification of Contractor's Staff	3.25	68
	8	Confined Site	3.2	64
	8a	Level of Quality Control	3.2	64
	8b	Availability of equipment on request	3.2	64
	8c	Site investigation by Main Contractor	3.2	64
	9	Planning, Scheduling & resource	3.15	63
9a	Similar Projects and Contractor Experience	3.15	63	



# Corporate Valuation of Transportation Company

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## ABSTRACT

There are several ways to value a company, the most famous and classical approaches of valuation are Discounted Cash Flow and EPS build-up projections. In this report we are using more recent model constructed by Stern Stewart consulting that is named the Economic Model or Economic Value Added model (EVA and MVA) in this report we selected FedEx Corporation to apply EVA on it ; being publicly listed company with multinational operations. Whereby, our objective is to assess financing decisions impact on shareholder's value.

**Key Words:** Corporate valuation, EVA, MVA, FCF

## INTRODUCTION

FedEx Corporation is a global logistics solutions corporation that provides e-commerce business services to customers and businesses worldwide in the form of express delivery of shipments. Currently headquartered in Memphis-Tennessee, FedEx Corporation was originally incorporated in Delaware on October 2, 1997 to serve as the parent holding company with an objective to provide strategic direction to four subsidiaries ; FedEx's subsidiary companies currently known as FedEx Express, FedEx Ground, FedEx Freight, and FedEx Services. The four business subsidiaries are working in arm's length and considered separate entities that compete collectively and operate independently under FedEx brand.

FedEx corp. is currently global leader in the express delivery business that offers delivery to individuals and businesses in 220 countries through operating platform of networks across the globe, managing 160,700 employees, 52,400 drop locations, 647 aircrafts and

54,100 vehicles/trailers in order to deliver effective logistic solutions.

The brand that is currently known as Federal Express, is rooted back to 1970; as it was originally founded by Frederick W. Smith; current chairman, President and CEO; based on an idea presented in economics working paper during his undergraduate study at Yale University

.Afterwards, Smith continued to evolve his idea about developing more reliable and efficient delivery service; till he came up with the name Federal Express for his new business that was incorporated in 1971.

FedEx officially began operations on April 17, 1973 with delivery of 186 packages. Then, the founder decided to move the company's headquarters from Arkansas to Memphis due to weather and geographic related advantages. By 1975, the company was finally able to generate profits with ongoing operations of delivering 19,000 average packages per day. Across the years, FedEx management has been successfully able to generate innovative ideas, benefit favorable market conditions and capture

lucrative opportunities in a way that enables it to expand its operations at an accelerated rate. In other words FedEx has the ability to benefit from all variables and dynamics in the industry and put it in its favor. Therefore, successful operations and adaptability of FedEx's management to market challenges and opportunities placed it starting early 1990s; as a market leader that holds 43% share of the express delivery market; compared to 26% market share of its nearest and largest competitor UPS.

The economic slowdown of 2007–2010 had a strong impact on FedEx in terms of revenues, as many customers looking for cost-cutting practices have either reduced their shipping transactions or moved to other cheaper alternatives, such as ground freight and sea shipping. In turn, FedEx applied a deep rooted restructuring plan that enables it to survive the recession pressures on the logistics business. Such restructuring plan includes large network capacity reductions with retiring some of the oldest and inefficient aircrafts in addition to announcing layoffs and work hour reductions at some of its hubs; moreover, the company implemented temporary pay freezes, eliminated retirement fund contributions and bonuses for employees.

Starting 2012, slow down pressures started to ease. According, in FYE 2013 FedEx was able to grow revenues by 4% with recording total revenues of USD 44.3Bn generated from USD 33.6 Bn total assets whereby 48% is financed through debt and 52% is financed through equity in FYE 2013

### **Freight Transportation Business – Literature Review**

Most researches done on shareholders' value creation have mostly concerned with comparison of traditional indicators like earnings, discounted cash

flow, IRR .etc.) . However, value based measures EVA is more concerned with economic value added as a percentage of operating capital invested. The purpose of such approach was introduced to identify the most significant factor that better measures the shareholder value. Existing literature on the touch points of shareholder's value is considered in growing phase. Currently, most corporate analysts in different industry sectors are using EVA approach as benchmark and key indicator of their investment recommendations. In this project, review has been done to exercise the application of EVA for the valuation of a company in the freight transportation business through going through independent components of the calculation like NOPAT, FCF, WAAC and MVA.

### ***MVA comparison in transportation industry***

A journal published in CFO.com issued by Stephen Taub has done an exercise to compare the MVA and grade the highest top performers in the transportation industry with the following findings:

The table shows that according to 2011 figures across the transportation industry , UPS ranked on the top of the list of market value added (MVA) with USD 57Bn compared to its followers Southwest airlines and FedEx in 2<sup>nd</sup> and 3<sup>rd</sup> grade .

### ***EVA & ROC comparison across publicly traded companies***

An exercise that has been illustrated in measuring corporate performance lecture by McGraw Hill publishers was done to compare the ROC and EVA of publicly listed companies in different sectors as of July 2013.

As shown in table above, the comparison ranked ExxonMobil as top performer with USD 17.5Bn EVA and 15.7% ROC compared to FedEx that recorded EVA of -241 and 5.3% ROC.

## OBJECTIVE OF STUDY

Corporate valuation model project discussed in this paper is aimed to assess the effect of management practices in relation cash flow management and related impacts on the market value of the company with ultimate reflection on the shareholder's value.

## RESEARCH METHODOLOGY

Methodology used to assess the value of the company and related impact on shareholder's value is to select a public listed company with multi-national operation and access Bloomberg database and company's investor relations web portal to collect 3 most recent income statements and balance sheets. Then, using MS excel to compute Free Cash flow, Return on Invested Capital, Economic Value Added and Market Value Added.

Being interested in logistics sector, I chose *FedEx Corporation*; global leader in express delivery business that offers shipment delivery to and from individuals and businesses in over 220 countries. Through research of financials, ratios, competitors and industry journals, I was able to understand the cash flow status of the company and digest the dynamics of shareholder's value creation process relying on FCF profile as a tool and base of my judgment as explained in this report.

### Methodology Abstract

<b>Objective</b>	Assess corporate value and impact on shareholder's value through selecting publicly
<b>Company</b>	FedEx Corporation
<b>Tools used</b>	Bloomberg database FedEx Investor relation web portal <a href="http://investors.fedex.com">http://investors.fedex.com</a>
<b>Analysis Used</b>	Assess ratios of FCF, ROIC, EVA, and MVA. Comparative analysis with ARAMEX being local company in same industry.

## CORPORATE VALUATION THEORY

There are two classic ways to value a stock. The most commonly used model is probably the one in which investors project next year's EPS (or cash flows, EBITDA, free cash flow, or sales) and assign a multiple to that number. The second one is the good old Discounted Cash Flow (DCF) model. Finally, there is a more recent one, the Economic Model or Economic Value Added model (EVATM, EVA<sub>TM</sub> and MVATM are trademarks of the consulting firm Stern Stewart).

After researchers reviewed the practicality of each model, they come to a conclusion that Economic valuation Model provides better view of the company's value by factoring value creation financial practices with linking the impact to market stock prices. In this report, the basic concepts of the Economic Model: ROIC, WACC, EVA and MVA will be used to assess the value creation practices of FedEx during FY period 2011-2013.

### Mechanics of Economic Valuation Model,

Return on invested capital (ROIC), ROIC shows the company's cash rate of return on invested operating capital the company has put to work. As it is considered a reasonable metric to measure the cash-on-cash return of a firm.

*Formula:*

$$\text{ROIC} = \text{NOPAT} / \text{Operating Capital}$$

### Mechanics

There are two components in the ROIC formula. The first one is net operating profits after-tax (NOPAT) and the second one is operating capital (OC). The difficulty in calculating ROIC is that it requires adjustments to be made from the financial statements. More important than knowing how to make adjustments is to know why they are being made. The following section addresses this issue.

NOPAT is the operating profit free from effects of the capital structure. NOPAT is one of the best ways to measure the cash generated by a company's operations as it takes away the effects of non-operating items such as investment income, non-recurring charges, goodwill amortization and Tax effect taken during the financial period. One way to calculate NOPAT is ;

**NOPAT = EBIT(1-Tax Rate)**

Operating capital is the amount of cash that has been invested in the company's business as normal part of operation. It is important to note that the adjustments considered during calculating NOPAT will affect invested capital as well. One way to calculate operating working capital is;

**OWC= (Opening Current Asset – Opening Current Liabilities) + Net Fixed Assets**

i) Economic Value Added (EVA), EVA is equivalent to economic profits. It is the residual income of a company by charging NOPAT (Net Operating Profits after Tax) with a capital charge. A company that generates positive EVA is said to be a value creator. A company that has a negative EVA is said to be a value destroyer.

*Formula:*

**EVA = NOPAT – (WACC) (OWC)**

#### **Mechanics**

One component of EVA formula is weighted average cost of capital (WACC). The WACC simply reflects the opportunity cost for debt and equity holders, weighted for their relative contribution to a company's capital structure. It is the minimum economic return a company must maintain to compensate its debt and equity security holders for their assumed risk.

WACC is calculated as follows:

**ka = we(ke) + wd(ki) + wp(kp)**

Whereas;

**We(Ke)** : is the weighted average cost of equity

**wd(ki)** : is the weighted average cost of debt

**wp(kp)** : is the weighted average cost of preferred equity (if any)

Weighted average cost of equity is calculated through the dividend growth model as follows: (Dividend / Current Market Price) + % of dividend growth year-on-year

Weighted average cost of debt is calculated through identifying the appropriate cost of debt to use is the market value. Using the market value cost of debt is more representative of the cost a company would have to pay if it were to raise debt today. To find the cost of debt, investors can use the yield-to-maturity (YTM) of the company's bonds, the coupon rate (assuming that bonds were issued at market) or the interest rate on its credit facility. Weighted average cost of equity is calculated through the dividend growth model as follows:

$$K_d = \text{Interest rate (1-tax rate) + } \frac{((\text{Debt Redeemable Value} - \text{Debt Sales Value}) / \text{Tenor}) + (\text{Redeemable Value} + \text{Sales Value}) / 2}$$

Market Value Added (MVA), MVA is the difference between a company's market value and its equity book value. Generally, if MVA is positive the market believes a company will generate returns above its cost of capital and vice-versa if not.

*Formula:*

**MVA = Market Value of the Firm – Book Value of the Firm**

Whereas;

**Market Value** = (# shares of stock)(price per share) + Value of debt

**Book Value** = Total common equity + Value of debt

**Corporate Valuation Analysis, Building Blocks –FedEx Corporation**

With FCF, ROIC, WACC, EVA and MVA demystified, understanding of FedEx's Economic Model is mostly complete as explained below.

During the period of 2011 to 2013, FedEx shows a steady increase in NOPAT on the back of profitable operations, revenue increase and controlling OPEX that lead to continuous increase in EBIT.

During testing period FedEx showed an uptrend in the Net Operating Working Capital as a result of the increase in operating current assets; namely cash items and acc. receivable; at a higher rate than the operating current liabilities.

Total operating capital has shown a YOY increase by 9.4% in 2011/2012 and 11.5% in 2012/2013 on the back of the increase in net operating fixed assets by USD 1.82Bn in 2011 and USD 2.43Bn in 2013 in addition to the increase in the net operating working capital (NOWC) by USD0.66Bn in 2012 and USD0.73Bn in 2013. Hence, FYE 2013 recorded Net operating Capital of USD23.62Bn.

During 2012 and 2013 FedEx showed a negative NOPAT coverage to Net Investment Operating Capital (i.e. Negative FCF). From the first look it can be seen as negative indicator; however, after overlooking the breakdown of the invested capital we found that NOC has 11% and 12% cash component in 2012 and 2013 respectively, moreover profitable operations as well as higher returns has encouraged the management to have self-financed asset replacement plans beyond the regular annually generated NOPAT.

Due to FedEx's management in deep awareness of profitability dynamics, it was able to impressively increase annual NOPAT at a higher rate (22% @ 2011/2012 and 33% @ 2012/2013) compared to invested capital growth rates (9% @ 2011/2012 and 11% @ 2012/2013) that resulted in a continuous increase in ROIC till reaching a desired level of 8.79% in FY2013 exceeding the 8.55% WACC

given for the same year.

Absolute growth is not always-good. It all depends on how the company managed to fuel its growth. Companies will likely invest more capital in order to expand. However, if the growth in NOPAT is the result of business transactions with ROICs below WACC, it destroyed value rather than creating it.

While FedEx grew its NOPAT by 21% in 2011/2012, it nonetheless reduced value because its ROIC (7.39%) has gone lower than its WACC (9.07%) for the same year that resulted in a negative EVA of USD356Mn. However, for 2012/2013, FedEx was able to rectify its EVA position to show positive USD58Mn as result of an enhanced ROIC (8.79%) that is higher than same period WACC (8.55%). Hence, economic value addition objective was attained during 2013.

EVA was achieved by FedEx financing managers in 2013 through the following dynamics:

Increasing NOPAT at a higher than usual rate (32.7%) as a result of focus on business operations that generates higher yield with better control over associated costs.

Reducing cost of debt from 3.35% in 2011 to 2.7% in 2013 as a result of LTD reduction from USD 1.7Bn in 2012 to USD 1.3Bn in 2013.

Reducing the cost of equity by decreasing the payout ratio from 10% to 8% that resulted in a reduction in  $K_e$  from 9.07% in 2011 to 8.55% in 2013.

Control the Increase in the invested operating capital at a growth rate that ultimately keeps the company within the acceptable ROIC benchmark.

After calculating MVA formula and rechecking all FCF, NOIC and EVA indicators, it is not surprising to see why

FedEx is traded at higher price than the book value of its equity with average multiple of 1.92x during the assessed period 2011-2013. Whereby, positive MVA shows that the company is considered a value accumulator rather than value leaker.

### **FedEx Versus Local Company in the same Industry**

The comparison largely shows size and complexity difference in terms of NOPAT that is 29x in FedEx than Aramex. However, off –the- top Aramex's FCF shows that it is in a better value addition shape with positive FCF, higher ROIC and all years positive EVA.

In terms of MVA both companies are traded higher than book value. However, FedEx is traded on an average multiple of 1.92x to its book compared 1.53x for Aramex.

### **SUMMARY & CONCLUSION**

During years of study FedEx management shown that it has been always committed to add value to its shareholders, given all the economic slowdown challenges. In 2013, earnings per share increased by 40 percent and annual revenues passed USD42Bn, 9% YOY increase. Effective finance decision making has enabled FedEx to enhance its NOPAT by 33% in 2013; while controlling the operating capital growth at a lower rate of 11% , that triggered an increase in ROIC to reach 8.79% compared WACC of 8.55% .

FedEx management's vision, leadership, prudent financial decisions in addition to commitment to deliver value to shareholder has been largely reflected on its value creation indicators. During 2013, EVA and MVA showed positive a figure of USD58Mn and UAD13.53Bn respectively. Whereby, it showed average market to book multiple of 1.92x.

In conclusion, FedEx has proved that it can respond effectively in difficult times. Management tools in the form of providing world-class delivery solutions,

enhancing network platform and continuous innovation at all operating levels supported by acumen financial decisions in the form of well-planned asset replacements and efficient growth dynamics in 2013 has resulted in adding value to shareholders evidenced by positive EVA & MVA and also signaled by ROIC (8.79%) that outweighed WACC (8.55%),whereby for each USD8.8 generated NOPAT; FedEx need to invest USD100 in operating capital, that is considered relatively fair when compared to complexity of operations , size of revenues and capital intensive nature of the assets (i.e. aircraft fleet).

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Number	Ticker	Company name	
<b>TRANSPORTATION</b>			
<b>TOP 5</b>			
1	UPS	United Parcel Service Inc	57,036
2	LUV	Southwest Airlines	8,650
3	FDX	Fedex Corp	8,558
4	EXPD	Expeditors Intl Wash Inc	3,435
5	CHRW	C H Robinson Worldwide Inc	2,691
<b>BOTTOM 5</b>			
1	AMR	Amr Corp/De	(2,763)
2	CSX	Csx Corp	(1,431)
3	DAL	Delta Air Lines Inc	(1,049)
4	UHAL	Amerco	(456)
5	DTG	Dollar Thrifty Automotive Gp	(411)

	1. Operating income*	2. Cost of Capital, %	3. Total Capitalization	4. EVA = 1 - (2 × 3)	ROC, %, = 1 ÷ 3
ExxonMobil	28,641	5.8	182,424	17,586	15.7
Walmart	15,396	5.2	129,374	8,639	11.9
Johnson & Johnson	11,952	7.1	73,778	6,638	16.2
Coca-Cola	7,093	5.5	35,643	4,943	19.9
Google	6,577	12.0	16,483	4,788	39.9
FedEx	952	6.4	17,954	-241	5.3
JCPenney	465	6.5	12,234	-330	3.8
Dow Chemical	2,638	5.7	56,129	-526	4.7
Xerox	712	9.6	21,326	-1,091	3.3
AT&T	16,779	8.2	250,440	-3,760	6.7

**Corporate Valuation Analysis**  
**FCF, FY 2011 – FY 2013**

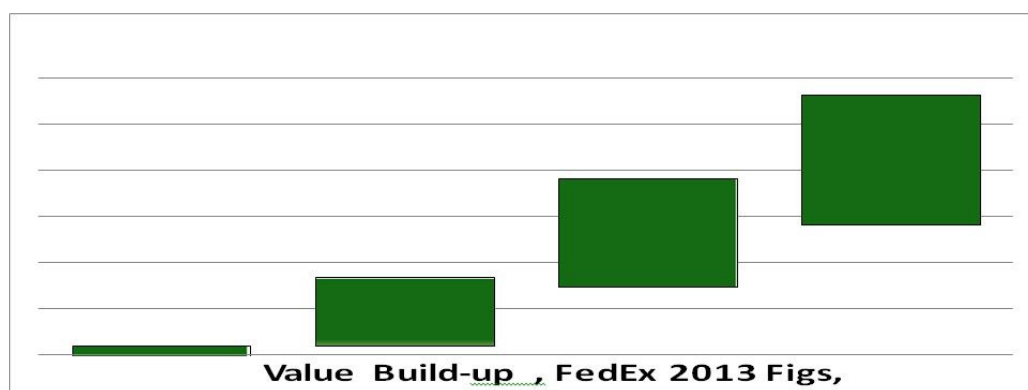
	FY 2011	FY 2012	FY 2013
Earnings Before Interest & Taxes	1,998	2,378	3,186
Income Taxes	(710)	(813)	(1,109)
<b>Net Operating Profit after Tax (NOPAT)</b>	<b>1,288</b>	<b>1,565</b>	<b>2,077</b>
<i>Operating Current Assets</i>			
Accounts & Notes Receivable	4,163	4,581	4,704
Cash & Near Cash items	1,952	2,328	2,843
Inventories	389	437	440
Total operating Assets	6,504	7,346	7,987
<i>Operating Current Liabilities</i>			
Accounts Payable	1,522	1,702	1,613
NOWC (Op CA - op CL)	4,982	5,644	6,374
Total Net Operating Capital			
Net Fixed Assets	14,385	15,543	17,248
NOC (NOWC + Net Fixed Assets)	19,367	21,187	23,622
<b>Free Cash Flow</b>			
(NOPAT - Net Investment in operating Capital)			
NOPAT	1,288	1,565	2,077
Net Investment in operating Capital	NA	(1,820)	(2,435)
FCF		(255)	(358)
<i>Uses of FCF</i>			
Pay Interest on Debt (Tax rate 35%)		56	34
Reduction (Increase) in Debt		244	(399)
Dividends Paid		151	164
Repurchase of Stock		5	69
Purch non operating asset		(201)	(226)

Economic Value Added (EVA)	FY 2011	FY 2012	FY 2013
EVA = NOPAT - (WACC)(Capital)			
NOPAT WACC	1,288	1,565	2,077
Kd , no bonds	3.04%	3.35%	2.70%
Ke , DG Model	9.62%	9.60%	8.92%
WACC	9.00%	9.07%	8.55%
Operating Capital	19,367	21,187	23,622
EVA	(455)	(356)	58



## Market Value Added

	FY 2011	FY 2012	FY 2013
MVA = Market Value - Book Value			
Avg # of Common and Common Equiv. Shares			314
Market Price FYE			317
Market Price FYE		\$83.49	\$93.64
Market Value (M price x # of common Shrs)		26,223	29,684
Book Value of equity		13,811	15,220
MVA		12,412	14,464
		13,530	
MV / BV Multiple (# times)		1.90	1.95
		1.92	



USD Mn	<u>FedEX</u>			<u>Aramex</u>		
	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>
<b>NOPAT*</b>	1,288	1,565	2,077	56	62	72
<b>FCF*</b>		(255)	(358)	11	78	36
<b>ROIC</b>	6.65%	7.39%	8.79%	21.00%	25.00%	25.00%
<b>EVA</b>	(455)	(356)	58	7	11	17
<b>MVA</b>	12,412	14,464	13,530	529	412	555

\*NOPAT & FCF in  
3.687

AED interpreted in

USD exchange d @

# **An Empirical Study on Impact of Employee's Perception Towards Performance Management System on Employee Motivation and Job Commitment**

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## **ABSTRACT**

Performance Management Systems (PMS) are complex; comprising diverse processes which seek to encourage the discretionary effort that enhances both individual and organizational performance. Performance Management System is one of the most important human resources systems in any organization. If the organization has an effective performance management system it can achieve its goal, by managing the performance of employees. All other human resources system such as employee development, human resources climate etc depends on performance management system. It is observed that all the organizations under the study have performance management system in one form or other. The aim of present study was to investigate the effective Performance Management System, which influence to increase the Employee's Motivation and their Commitment level. It was investigated among 110 staff level employees of an automotive instruments and allied accessories manufacturing company. The results of the study reveal that there is a major impact of perception of employees towards performance management system. Further the results also indicated that there is a significant difference between motivation and commitment factor among the employees of the organization.

Key Words: Performance Management, Job Commitment, Motivation, Perception

## **INTRODUCTION**

The role of HR in the present scenario has undergone a sea change and its focus is on evolving such functional strategies which enable successful implementation of the major corporate strategies. Today, HR works towards facilitating and improving the performance of the employees by building a conducive work environment and providing maximum opportunities to the employees for participating in organizational planning and decision making process. Today, all the major activities of HR are driven towards development of high performance leaders and fostering employee motivation. So, it can be interpreted that the role of HR has evolved from merely an appraiser to a facilitator and an enabler.

Performance management is the current buzzword and is the need in the current times of cut throat competition and the organizational battle for leadership. Performance management is a much broader and a complicated function of HR, as it encompasses activities such as joint goal setting, continuous progress review and frequent communication, feedback and coaching for improved performance, implementation of employee development programs and rewarding achievements.

The process of performance management starts with the joining of a new incumbent in a system and ends when an employee quits the organization. Performance management can be regarded as a systematic process by which the overall performance of an organization can be improved by improving the performance of individuals within a team framework. It is

a means for promoting superior performance by communicating expectations, defining roles within a required competence framework and establishing achievable benchmarks.

According to Armstrong and Baron (1998), Performance Management is both a strategic and an integrated approach to delivering successful results in organizations by improving the performance and developing the capabilities of teams and individuals. The term performance management gained its popularity in early 1980's when total quality management programs received utmost importance for achievement of superior standards and quality performance. The process is very much cyclical and continuous in nature.

### **Evaluation of Performance Management efficacy:**

Performance management is one of the most widely research areas in industrial and organization psychology( Murhy And Cleveland 1991.Over 90% of the large organizations employ some or other kind of appraisal ( Locker & Teel 1998,Murphy & Cleveland 1991; Seldom, Ingraham & Jacobson 2001) the widespread use of the performance management can be attributed to the belief by many managers and human resource professionals that performance management is critically needed tool for effective human resource management and performance improvement( Longenecker& Goff,1992). The assumption appears to be that an effectively designed, implemented and administered performance management system can provide the organization, the manager and the employee with plethora of benefits (Cascio, 1987; Copens & Jenkins, 2000) .The literature indicates that there are many factors to consider in the evaluation of performance management including employee attitudes towards variables such as perceptions of fairness. Bretz, Milkovich

And Read (1992) indicate that the most important performance management issue faced by the organizations is the perceived fairness of the performance review their findings suggested that most employees perceive their performance management system as neither accurate nor fair.

### **Employee Motivation**

In the organizational setting the word "Motivation" is used to describe the drive that impels an individual to work. A truly motivated person is one who "wants" to work. Both employees and employers are interested in understanding motivation if employees know what strengthens and what weakens their motivation, they can often perform more effectively to find more satisfaction in their job. Employers want to know what motivates their employees so that they can get them to work harder. When people speak of motivation or ask about the motives of person, they are really asking "Why" the person acts, or why the person acts the way he does.

The concept of motivation implies that people choose the path of action they follow. When behavioral scientists use the word motivation, they think of its something steaming from within the person technically, the term motivation has its origin in the Latin word "mover" which means "to move". Thus the word motivation stands for movement. One can get a donkey to move by using a carrot or a stick; with people one can use incentives, or threats or reprimands. However, these only have a limited effect. These work for a while and then need to be repeated, increased or reinforced to secure further movement.

If a manager truly understands his subordinate's motivation, he can channel their "inner state" towards command goals, i.e., goals, shared by both the individual and the organization. It is a well-known fact that human being have great potential but they do not use it fully , when motivation is

absent .Motivation factor are those which make people give more than a fair day,,s work and that is usually only about sixty-five percent of a person,,s capacity. Every manager should have both interest and concern about how to enable people to perform task willingly and to the best of their ability.

### **Challenges:**

The framework of motivation indicates that motivation is a simple process. But in reality, the task is more daunting one reason why motivation is a difficult task is that the workforce is changing. Motivating employees is also more challenging at a time when firms have dramatically changed the jobs that employees perform, reduced layers of hierarchy, and jettisoned large numbers of employees in the name of right-sizing or down-sizing. These actions have considerably damaged the level of trust and commitment necessary for employee to put in efforts above minimum requirements some organization have resorted to hire and fire and pay – for- performance strategies almost giving up motivational efforts.

### **Job Commitment**

Today it becomes necessary for every organization to have full level of its employee commitment in order to have outstanding performance on long term basis. Currently employees act like entrepreneurs when they work in a team and every member of the team. Those things increase their commitment level in the organization that ultimately increases the performance of the organization. In past organizations provide job security to its employees to improve their commitment level in the organization and to improve their productivity. Higher level of employee commitment in the organization for individual projects or to the business is assumed as a major reason for better

organizational performance that leads to organizational Success.

## **REVIEW OF LITERATURE**

### **PERFORMANCE MANAGEMENT SYSTEM**

The challenges facing organizations are heightened by the rapidly changing and increasingly competitive global business environment. As organizations work hard to gain a competitive advantage over their rivals, they look to their management information systems to assess their internal strengths, weaknesses, opportunities and threats from their immediate environment.

This requires organizations to have a thorough understanding of their core business operations and factors that impact on it. To be able to do this, organizations require an effective performance management system to allow them to plan, implement and assess their progress towards the achievement of set objectives.

According to Coelho and Moy (2003), the sustainability of organizations is directly linked to the continual improvement of business performance. Many organizations have found a way to improve performance through the establishment of processes and systems which also require the development and implementation of a well structured performance management system. It is through such systems that the business and its interested parties achieve agreed objectives, thus maximizing productivity and value added. The effectiveness of these performance management systems is often hampered by a number of factors. Due to the fact that these systems are designed to measure people performance, the human factor is often attributed to their ineffectiveness.

De Waal (2003) identified 18 individual behavioral factors that are important in the successful implementation and regular use of a performance

management system. These can be subdivided into the managers understanding of the nature of performance management, their attitude, the alignment of the system to the managers' responsibilities, organizational culture as well as the focus of the system on internal management control. These individual behavioral factors have a direct impact on the accuracy and fairness of a performance management system. Employee perceptions of the fairness and effectiveness of the performance system are often shaped by how they perceive their managers' attitudes, their understanding and application of the system as well as the culture of the organization.

#### **Definition of performance management:**

Mucha (2009) defines performance management as an ongoing, systematic approach to improve results through evidence based decision making, continuous organizational learning and a focus on accountability for performance. It uses evidence from performance measurements or appraisals to support effective planning, funding and operations within the organization. This empowers managers to improve on services or products on offer, and increasing both customer satisfaction and where applicable, profits.

Performance management is usually described as the system through which organisations set work goals, determine performance standards, assign and evaluate work, provide performance feedback, determine training and development needs and distribute rewards, (Varma, Budhwar & DeNisi, 2008).

Aguinis (2009) lists the six purposes of a performance management system. These systems can be used administratively as a source of information for making decisions about employees. They allow for communication of expectations and

feedback to employees. They provide information relating to employee strengths and weaknesses, and in so doing enable the identification of developmental needs and recommend remedial action. Good performance management systems yield information about skills, abilities and employee potential which can be used in workforce planning. And finally, a good performance management system should be able to record critical employee performance data which can be used when making decisions about employee rewards.

#### **Job Commitment:**

The employee will be as considered when he will remain with the organization for long time period and desires to live in the same organization. Over the years, tremendous researches have been conducted to support that statement. At the end it was concluded that committed employees stay in the organization for long time period in contrast of those who are relatively less committed with the organization.

Also, Jeffrey Arthur (1994) concluded that organizational performance will be enhanced by higher level of employee commitment. Arthur also found productivity of the organization ultimately increased with the help of organizational commitment.

Patrick Owens (2006) also found in his studies that committed employees lead to higher organizational performance and very low level of employee shift from the organization. Effective organizational commitment is always a result of the core behavior of the major employees along with their behavioral factors like turnover intention (Addae et al., 2006).

A recent consultancy Report by AON (2000) claimed, from a survey of 1570 workers, that 39 per cent of UK workers were committed to continuing in their jobs, usually called continuance commitment.

### **The determinants of employee commitment:**

Cohen (1995) and others have also found that so-called non-work domains, the amounts of outside ties, the organization's support for non-work, as well as personal coping strategies, had significant effects on a sample of nurses' organizational commitment. There are elements of these studies, therefore, that suggest indirectly that work-life balance policies may be related to employee commitment.

### **Employee Motivation:**

Ederer and Manso's (2011) study titled "Is Pay for Performance Detrimental to Innovation?" concluded the following: ...the optimal incentive scheme that motivates exploration is fundamentally different from standard pay-for-performance schemes used to motivate effort. Tolerance (or even reward) for early failure, reward for long-term success, excessive continuation, commitment to a long-term incentive plan, and timely feedback on performance are all important to motivate exploration.

Grant and Singh (2011), two management professors from The Wharton School of the University of Pennsylvania, argue that traditional incentive schemes (stock options and bonuses) are often beneficial for motivating and improving employee performance, but can have serious repercussions such as "unethical behavior, fuel turnover, and foster envy and discontent." Moreover, they further explain that financial incentives are best used with the following three guidelines: when tasks are algorithmic in nature and generally uninteresting, when the financial incentives are small, and they work in conjunction with major initiatives.

## **REASERCH METHODODLOGY**

### **Problem Statement**

Every organization needs an efficient means for managing performance

management. Most of the organization considers the importance of performance management as a tool and instrument to evaluate their employee's perception towards employee's motivation and job commitment in the organization as a whole. Different organization has different performance management system and processes. Although the performance management has been designed to develop the most appropriate instrument in measuring employees work performance, nevertheless, there had been problems of unsatisfied employees towards the implementation of the system. Employees had difference in perception towards the performance management system and it is reflected in their work motivation and job commitment.

### **OBJECTIVES OF THE STUDY**

To identify the employee's general perception towards the performance management system in the organization.

To identify the employees perception towards the benefit of performance management system and employee motivation.

To identify the employees perception towards the benefit of performance management system and Job Commitment.

To determine the relationship between employees perception towards the performance management system and employee motivation and Job commitment

To determine the association between employees perception towards the performance management system with demographic variables.

### **HYPOTHESIS OF THE STUDY**

Based on the above literature review the following null hypothesis are been framed

**H<sub>01</sub>:** There is no significant mean difference in Job Commitment Scores and Motivation Score of the employees who perceive Performance planning (dimension of

Performance Management System) as favourable or Unfavourable.

**H0<sub>2</sub>:** There is no significant mean difference in Job Commitment Scores and Motivation Scores of the employees who perceive Performance Appraisal Review (dimension of Performance Management System) as favourable or Unfavourable.

**H0<sub>3</sub>:** There is no significant mean difference in Job Commitment Scores and Motivation Scores of the employees who perceive Rewarding Good Performance (dimension of Performance Management System) as favourable or Unfavourable.

**H0<sub>4</sub>:** There is no significant mean difference in Job Commitment Scores and Motivation Scores of the employees who perceive Potential Appraisal (dimension of Performance Management System) as favourable or Unfavourable.

**H0<sub>5</sub>:** There is no significant mean difference in Job Commitment Scores and Motivation Scores of the employees who perceive Benefits (dimension of Performance Management System) as favourable or Unfavourable.

#### **Sampling Frame:**

#### **Population:**

The population comprises of 660 employees (staff level) working in 22 various departments in an automotive instruments and allied accessories manufacturing company. The age of the population range from 24- 58 which includes both sexes.

#### **Sampling Unit:**

Employees of automotive instruments and accessories of automobiles manufacturing company

**Sample Size:** 110 respondents

#### **Sampling Technique:**

Proportionate stratified random sampling. Five employees from each

department (every 6<sup>th</sup>, 12<sup>th</sup>, 18<sup>th</sup>, 24<sup>th</sup>, & 30<sup>th</sup> position in each department) were taken for sample study.

#### **Data Collection method:**

Primary and Secondary

#### **Primary Data:**

A structured standardized questionnaire was used for collecting data from the respondents. The following tools were used for the present study,

Performance Management System

- ManokoMagdeline Matlala (2011).

Employee Motivation

- Prof.S.Sultan Akthar (1987).

Job Commitment

-Balaji (1979).

#### **Reliability**

S.No	Tools	Reliability
1.	Performance Management System Questionnaire	0.82
2.	Employee Motivation Questionnaire	0.86
3.	Job Commitment Questionnaire	0.91

#### **Statistical Analysis**

The data collected from the respondents were the first edited and coded with the help of SPSS 16.0 statistical software. Descriptive and inferential statistics were computed.

#### **FINDINGS AND RESULTS**

**H0<sub>1</sub>:** From the table 1, the Z-value (0.495) for the mean difference in Job Commitment scores between employees who perceive Performance Planning as favourable and unfavourable is not significant ( $p=0.622$ ) and similarly the Z-value (1.027) for the

mean difference in Motivation scores between employees who perceive Performance Planning as favourable and unfavourable is not significant ( $p=0.307$ ). It can be inferred that the Job Commitment and Motivation was similar for employees who perceive Performance Planning as favourable and unfavourable.

**H0<sub>2</sub>:** From the table 2, the Z-value (1.883) for the mean difference in Job Commitment scores between employees who perceive Performance Appraisal Review as favourable and unfavourable is not significant ( $p=0.062$ ) and the Z-value (1.571) for the mean difference in Motivation scores between employees who perceive Performance Appraisal review as favourable and unfavourable is not significant ( $p=0.119$ ). It can be inferred that the Job Commitment and Motivation was similar for employees who perceive Performance Appraisal Review as favourable and unfavourable.

**H0<sub>3</sub>:** From the table 3, the Z-value (1.386) for the mean difference in Job Commitment scores between employees who perceive Rewarding Good Performance as favourable and unfavourable is not significant ( $p=0.169$ ) and the Z-value (1.720) for the mean difference in Motivation scores between employees who perceive Rewarding Good Performance as favourable and unfavourable is not significant ( $p=0.088$ ). It can be inferred that the Job Commitment and Motivation was similar for employees who perceive Rewarding Good Performance as favourable and unfavourable.

**H0<sub>4</sub>:** From the table4, the Z-value (0.964) for the mean difference in Job Commitment scores between employees who perceive Potential Appraisal as favourable and unfavourable is not significant ( $p=0.337$ ) and the Z-value (0.895) for the mean difference in Motivation scores between employees who perceive Potential Appraisal as

favourable and unfavourable is not significant ( $p=0.373$ ). It can be inferred that the Job Commitment and Motivation was similar for employees who perceive Potential Appraisal as favourable and unfavourable.

**H0<sub>5</sub>:** From the table5, the Z-value (1.479) for the mean difference in Job Commitment scores between employees who perceive Benefits as favourable and unfavourable is not significant ( $p=0.142$ ) and the Z-value (0.893) for the mean difference in Motivation scores between employees who perceive Benefits as favourable and unfavourable is not significant ( $p=0.375$ ). It can be inferred that the Job Commitment and Motivation was similar for employees who perceive Benefits as favourable and unfavourable.

## CORRELATION

The table 6 shows the inter correlation between the variables. It is evident from the results that Performance Management System has high positive correlation between Employee Motivation and Job Commitment (0.847).

## REGRESSION

### Motivation Factor

The regression analysis was performed to predict the factors of perception of performance management system that lead to motivation among the employees. From table 7, the R is the value of the multiple correlation coefficients between the predictors and the outcome. Here the correlation between the factors that lead to motivation of an employee is 0.77. The R-square, which is a measure of how much of the variability in the outcome, is accounted by the predictors. In this model, the R- square value is 0.59 which means that factors of perceptions of performance management accounts for 59 % of the variation in Motivation. The adjusted R-square shows how well the model generalizes and the value of the



adjusted R-Square are close to the value of R-square.

In ANOVA table 7, the F-ratio 18.53 reveals that the model is significant ( $P < 0.001$ ) and is very unlikely to have happened by chance and the model significantly improves the ability to predict the outcome variable. The beta value tells about the relationship between motivation and each predictor. In this model the t-test associated with the beta value of the predictor (Experience and Performance improvement plans) is making a significant contribution to the model. Hence, regression analysis results showed that above mentioned factors are closely associated with motivation of an employee.

### **COMMITMENT FACTOR**

The regression analysis was performed to predict the factors of perception of performance management system that lead to Commitment among the employees. From table 8, the R is the value of the multiple correlation coefficients between the predictors and the outcome. Here the correlation between the factors that lead to Commitment on an employee is 0.90. The R-square, which is a measure of how much of the variability in the outcome, is accounted by the predictors. In this model, the R-square value is 0.81 which means that factors of perceptions of performance management accounts for 81% of the variation in Commitment. The adjusted R-square shows how well the model generalizes and the value of the adjusted R Square are close to the value of R-square.

In ANOVA table 8, the F-ratio 55.49 reveals that the model is significant ( $P < 0.001$ ) and is very unlikely to have happened by chance and the model significantly improves the ability to predict the outcome variable. The beta value tells about the relationship between motivation and each predictor. In this model the t-test

associated with the beta value of the predictor (Experience and Performance improvement plans) is making a significant contribution to the model. Hence, regression analysis results showed that above mentioned factors are closely associated with Commitment of an employee.

### **ONE-WAY ANOVA**

#### **Gender**

From table 9, the F value (3.742) for the mean difference in the perceived Performance Management System scores between Male and Female is significant ( $p < 0.05$ ). The mean perceived Performance Management System of male and female were 50.430 and 52.184 respectively. The result reveals that female are perceived positive regarding Performance Management System when compared to male. The F value (0.141) for the mean difference in the perceived Motivation scores between Male and Female is not significant ( $p = 0.708$ ). The F value (1.560) for the mean difference in the perceived Job Commitment scores between Male and Female is not significant ( $p = 0.214$ ).

#### **Education**

From table 10, the F value (1.923) for the mean difference in the employees perception towards Performance Management System between the levels of education is not significant ( $P = 0.130$ ). It reveals that the employee's perception towards Performance Management System is similar irrespective of their educational level. With regard to motivation of the employees the F value (9.882) is significant ( $P < 0.001$ ). It states that there is a significant difference in the motivation of the employees and their education level. The Post hoc analysis reveals that Employees with Diploma is more motivated when compared to other disciplines. Regarding job commitment, the F value (10.207) is significant ( $P < 0.001$ ). It shows that there is

a significant difference in the Job commitment of the employees and their education level. The Post hoc analysis reveals that Employees with Diploma is more committed towards the job when compared to other disciplines.

### **Department**

From Table 11, the F value (0.783) for the mean difference in the employees perception towards Performance Management System between the levels of department is not significant ( $P=0.506$ ). It reveals that the employee's perception towards Performance Management System is similar irrespective of their department level. With regard to motivation of the employees the F value (2.903) is significant ( $P< 0.038$ ). It shows that there is a significant difference in the motivation of the employees and their department level. The Post hoc analysis reveals that Employees in Production and HR department is more motivated when compared to other disciplines. Regarding job commitment, the F value (2.261) is not significant ( $P=0.086$ ). It shows that there is a no significant difference in the Job commitment of the employees and their department level. It reveals that the job commitment of the employees is similar irrespective of their department level.

### **Total Years of Experience**

From table 12, the F value (1.851) for the mean difference in the employees perception towards Performance Management System between the levels of experience is not significant ( $P=0.142$ ). It reveals that the employees' perception towards Performance Management System is similar irrespective of their experience level. With regard to motivation of the employees the F value (23.095) is significant ( $P< 0.001$ ). It shows that there is a significant difference in the motivation of the employees and their experience level. The Post hoc analysis reveals that

Employees having with above 15Years of experience level were highly motivated when compared to others. Regarding job commitment, the F value (57.427) is significant ( $P< 0.001$ ). It shows that there is a significant difference in the Job commitment of the employees and their experience level. The Post hoc analysis reveals that Employees having with above 15 Years of experience were more committed towards the job when compared to others.

## **DISCUSSIONS**

Employees have differences in perception towards the Performance management system. Those employees who had a high score of performance management considered the system as efficient and effective and perceive it positively. Employees who had a positive perception are more motivated to perform their work whereas employees who had a negative perception consider the system as bias, not properly implemented and not an appropriate ways to evaluate employee's perception towards work performance (Gabris and Mitchell, 1989).

Employee's negative perception towards the performance management system will affect their perception towards work performance, demotivated, and cause poor performance. Lawric (1990) considered performance management as the most difficult and critical aspect in the organization. According to Derven (1990), there are so many sources as evidence such as researchers, managers, and psychometric experts who are not confident on the effectiveness and efficiency of the performance management system. Some considered the system as bias, not fairly implemented, and develop a negative perception towards the system.

Performance management can be productive, threatening, dreaded and reassuring. They may be given to achieve

various organizational goals. Performance management is more certainly delivered by those supervisor or appraisers with diverse management experience and skills.

Evaluation of employee's performance, which may be objectively or subjectively perceptual biased, is many times perceived as a necessary event in today's public/private sector organizations.

### CONCLUSION

Performance Management System has the great effect on employee's regular performance, which ultimately leads to increasing the organization effectiveness. Performance Management system is one of the most important human resources system in any organization. If the organization has an effective performance management system it can achieve its goal, by managing the performance of employees. All other human resources system such as employee development, human resources climate etc depends on performance management system. It is observed that all the organizations under the study have performance management system in one form or other. There are specific areas which need improvement in the system in different organization. If one looks at the experience from all the organizations it is clear that certain basic aspects such as goals of performance management system, clarity of employee roles and responsibility, opportunity to use performance management system as opportunity to communicate expectations, achievements, failures, constraints and improvement required.

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**Table: 1 Job Commitment & Motivation with Performance planning**

	Performance Planning	N	Mean	Standard Deviation	Z Value	Level Of Significance
Job Commitment	FAVOURABLE	68	15.42	2.840	0.495	0.622
	UNFAVOURABLE	42	15.14	3.048		
Motivation	FAVOURABLE	68	48.89	8.782	1.027	0.307
	UNFAVOURABLE	42	47.14	8.578		

**Table 2: Job Commitment & Motivation with Performance Appraisal Review**

	Performance Appraisal Review	N	Mean	Standard Deviation	Z Value	Level Of Significance
Job Commitment	FAVOURABLE	104	15.44	2.932	1.883	0.062
	UNFAVOURABLE	6	13.16	1.329		
Motivation	FAVOURABLE	104	48.53	8.771	1.571	0.119
	UNFAVOURABLE	6	42.83	5.600		

**Table 3: Job Commitment & Motivation with Rewarding Good Performance**

	Rewarding Good Performance	N	Mean	Standard Deviation	Z Value	Level Of Significance
Job Commitment	FAVOURABLE	70	15.02	2.948	1.386	0.169
	UNFAVOURABLE	40	15.82	2.809		
Motivation	FAVOURABLE	70	47.15	8.320	1.720	0.088
	UNFAVOURABLE	40	50.10	9.153		

**Table 4: Job Commitment & Motivation with Potential Appraisal**

	Potential Appraisal	N	Mean	Standard Deviation	Z Value	Level Of Significance
Job Commitment	FAVOURABLE	77	15.49	2.989	0.964	0.337
	UNFAVOURABLE	33	14.90	2.719		
Motivation	FAVOURABLE	77	48.71	8.858	0.895	0.373
	UNFAVOURABLE	33	47.09	8.367		

**Table 5: Job Commitment & Motivation with Benefits**

	Benefits	N	Mean	Standard Deviation	Z Value	Level Of Significance
Job Commitment	FAVOURABLE	66	15.65	3.075	1.479	0.142
	UNFAVOURABLE	44	14.81	2.599		
Motivation	FAVOURABLE	66	48.83	8.907	0.893	0.375
	UNFAVOURABLE	44	47.31	8.418		

**CORRELATION****Table 6: Correlation between Employee Motivation and Job Commitment:**

Source	Employee Motivation	Job Commitment
Employee Motivation	1	.847
	110	110
Job Commitment	.847	1
	110	110

**REGRESSION****Table 7: Representing the Motivation Factor:**

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.771 <sup>a</sup>	.595	.563	5.75858

ANOVA <sup>b</sup>						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	4916.034	8	614.504	18.531	.000 <sup>a</sup>
	Residual	3349.284	101	33.161		
	Total	8265.318	109			

<b>Coefficients<sup>a</sup></b>						
<b>Model</b>		<b>Unstandardized Coefficients</b>		<b>Standardized Coefficients</b>	<b>t</b>	<b>Sig.</b>
		<b>B</b>	<b>Std. Error</b>	<b>Beta</b>		
1	(Constant)	42.100	6.735		6.251	.000
	Experience	1.519	.154	.668	9.878	.000
	Performance Planning	-.462	.365	-.090	-1.266	.209
	Performance Appraisal and Review	.361	.550	.048	.656	.513
	Feedback	-.242	.436	-.043	-.556	.580
	Rewarding Good Performance	.434	.335	.093	1.295	.198
	Performance Improvements Plans	-.975	.353	-.189	-2.761	.007
	Potential Appraisal	-.564	.899	-.047	-.627	.532
	Benefits	-.161	.358	-.031	-.450	.654

**Table 8: Representing the Commitment Factor**

<b>Model Summary</b>					
<b>Model</b>	<b>R</b>	<b>R Square</b>	<b>Adjusted R Square</b>	<b>Std. Error of the Estimate</b>	
1	.903 <sup>a</sup>	.815	.800	1.30199	

<b>ANOVA<sup>b</sup></b>						
<b>Model</b>		<b>Sum of Squares</b>	<b>Df</b>	<b>Mean Square</b>	<b>F</b>	<b>Sig.</b>
1	Regression	752.650	8	94.081	55.499	.000 <sup>a</sup>
	Residual	171.214	101	1.695		
	Total	923.864	109			

Coefficients <sup>a</sup>					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	10.934	1.523		7.181	.000
Experience	.647	.035	.852	18.609	.000
Performance Planning	.002	.083	.001	.026	.980
Performance Appraisal and Review	.020	.124	.008	.164	.870
Feedback	-.034	.099	-.018	-.349	.728
Rewarding Good Performance	-.011	.076	-.007	-.142	.887
Performance Improvements Plans	-.263	.080	-.152	-3.294	.001
Potential Appraisal	-.112	.203	-.028	-.553	.581
Benefits	-.121	.081	-.069	-1.502	.136

### ONE - WAY ANOVA

Table 9: Representing the Gender

ANOVA						
MODEL	GROUP	Sum of Squares	df	Mean Square	F	Sig.
PERFORMANCE MANAGEMENT SYSTEM	Between Groups	76.491	1	76.491	3.742	.056
	Within Groups	2207.363	108	20.439		
	Total	2283.855	109			
MOTIVATION	Between Groups	10.766	1	10.766	.141	.708
	Within Groups	8254.553	108	76.431		
	Total	8265.318	109			
JOB COMMITMENT	Between Groups	13.158	1	13.158	1.560	.214
	Within Groups	910.705	108	8.432		
	Total	923.864	109			

**Table 10: Representing the Education**

<b>ANOVA</b>						
<b>MODEL</b>	<b>GROUP</b>	<b>Sum of Squares</b>	<b>df</b>	<b>Mean Square</b>	<b>F</b>	<b>Sig.</b>
PERFORMANCE MANAGEMENT SYSTEM	Between Groups	117.874	3	39.291	1.923	.130
	Within Groups	2165.980	106	20.434		
	Total	2283.855	109			
MOTIVATION	Between Groups	1806.471	3	602.157	9.882	.000
	Within Groups	6458.847	106	60.933		
	Total	8265.318	109			
JOB COMMITMENT	Between Groups	204.228	3	68.076	10.027	.000
	Within Groups	719.636	106	6.789		
	Total	923.864	109			

**Table 11: Representing the Department**

<b>ANOVA</b>						
<b>MODEL</b>	<b>GROUP</b>	<b>Sum of Squares</b>	<b>Df</b>	<b>Mean Square</b>	<b>F</b>	<b>Sig.</b>
PERFORMANCE MANAGEMENT SYSTEM	Between Groups	49.509	3	16.503	.783	.506
	Within Groups	2234.346	106	21.079		
	Total	2283.855	109			
MOTIVATION	Between Groups	627.443	3	209.148	2.903	.038
	Within Groups	7637.875	106	72.055		
	Total	8265.318	109			
JOB COMMITMENT	Between Groups	55.563	3	18.521	2.261	.086
	Within Groups	868.301	106	8.192		
	Total	923.864	109			

**Table 12: Representing the Total Years of Experience**

<b>ANOVA</b>						
<b>Model</b>	<b>Group</b>	<b>Sum of Squares</b>	<b>df</b>	<b>Mean Square</b>	<b>F</b>	<b>Sig.</b>
PERFORMANCE MANAGEMENT SYSTEM	Between Groups	113.697	3	37.899	1.851	.142
	Within Groups	2170.158	106	20.473		
	Total	2283.855	109			
MOTIVATION	Between Groups	3267.027	3	1089.009	23.095	.000
	Within Groups	4998.292	106	47.154		
	Total	8265.318	109			
JOB COMMITMENT	Between Groups	571.933	3	190.644	57.421	.000
	Within Groups	351.930	106	3.320		
	Total	923.864	109			



# An Empirical Study on Eco-Friendly Awareness and Practice among College Youth

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## ABSTRACT

As long as man used nature to cater his needs there was no problem, but when his attention and attitude turned towards attaining more economic wealth and comfort. The earth has started to lose its comfort ability and compatibility to the process of self-healing and regeneration. Man's activities nowadays have created the doubt of sustainability of the earth. All these problems could be solved only when man starts loving his environment and try to protect it. This becomes possible only if he has proper environmental awareness towards eco-friendly attitude and starts practicing eco-friendly behavior. There are four ways of limiting what we get into the waste stream and it is abbreviated as- „3RCs“ **Reducing, Reusing, Recycling and Composting. This study seeks to focus on the eco-friendly attitude of college youth on their awareness and practice level.**

**Key words:** 3RCs, Consumerism, Environmental Awareness, Environmental Degradation, Environmental Pollution, Individual Eco-Friendly Awareness and practice

## INTRODUCTION

As long as man used nature to cater his needs there was no problem, but when his attention and attitude turned towards attaining more economic wealth and comfort. The earth has started to lose its comfort ability and compatibility to the process of self-healing and regeneration.

Man's activities nowadays have created the doubt of sustainability of the earth. This fast growth of human species in terms of number, culture and technology makes no sense without the element of sustainability in it. The population explosion and the industrial revolution of the 18<sup>th</sup> & 19<sup>th</sup> centuries may appear to be the cause of all environmental problems, but if we take an insight into the problem, man's foolishness and lust for short term gains are the reason for these environment degradations which have led to several problems such as Global warming, increase in sea level, erratic climatic conditions, desertification etc. All these problems could be solved only

when man starts loving his environment and try to protect it. This becomes possible only if he has proper environmental awareness towards eco-friendly attitude and starts practicing eco-friendly behavior.

## DEFINITIONS

**ENVIRONMENT:** Environment is the sum of all social, economical, biological, physical and chemical factors which constitute the surroundings of man, who is both the maker and molder of his environment.

**ENVIRONMENTAL DEGRADATION:** The natural environmental system operates through self-regulating mechanism which is called as „**Homeostatic mechanism**“ (i.e) any change in natural eco system is counter balanced by changes in the other components of the environment. When the environment loses its capacity to overcome the changes caused to it, then it is called as environmental degradation.<sup>1</sup>

**ENVIRONMENTAL POLLUTION:** “Any undesirable change in the physical,

chemical or biological characteristics of air, water or land, affecting the human life, the life of desirable species, industrial processes, living conditions and raw material resources" is termed as environmental pollution.<sup>2</sup>

### **CONSUMERISM**

The inventions and technological revolution have taken the man beyond the horizons of comfort. Consumerism is the rapid consumption pattern exhibited by the consumers. In other words, when the consumers buy things and use them more than their need, it is called as consumerism.<sup>3</sup>

### **FACTORS LEADING TO CONSUMERISM**

There are many factors causing this consumerism. Some of them are,

- Industrial Revolution,
- Economies Of Scale ,
- Growth of rapid Transportation,
- Cross Cultural Factors ,
- Improved Standard Of Living,
- Increased Media Impact,
- Increased Promotional Offers and
- Economic wealth formation

### **IMPORTANCE OF ENVIRONMENTAL AWARENESS**

Owing to the immense pressure from the Government, NGO's and improved literacy rate, the awareness about the environment has started penetrating slowly among the public, but still it is in the nascent stage. Generally issues related to environment have often been branded as anti development, but environmental awareness enables the public to maintain a balance between our needs and supplies so that the delicate ecological balance is not disturbed. Environmental awareness needs to be created through formal and informal education to all sections of the society.<sup>4</sup>

### **REASONS FOR ENVIRONMENTAL IGNORANCE**

Failure to integrate knowledge in environmental aspects as an essential component of the curriculum in the primary classes, but now it has changed because of the introduction of environmental studies to all classes till the undergraduate level as per the decree of the Supreme Court of India.

Lack of training among the planners, decision makers, politicians and the administrators to incorporate environmental aspects into their plans.

Purposeful negligence of environmental aspect which may hinder some development projects.

Greater consideration for economic gains over shadows the basic environmental issues.

### **ROLE OF INDIVIDUALS IN PREVENTING ENVIRONMENTAL DEGRADATION**

Owing to the cross cultural impact, we are slowly moving towards the throw away or the disposable culture which is being followed in the western countries. Disposable pens, plates, cups, diapers, batteries, electronic goods etc have become the order of the day.<sup>5</sup> A moment's thought will impress upon us how much trash each one of us is individually responsible for. As an individual, we can reduce waste by reducing what we buy, by reducing the things we buy until they are past repair, by recycling used items into new products, by composting bio-degradable wastes. These are the four ways of limiting what we get into the waste stream and it is abbreviated as- „3RCs" **Reducing, Reusing, Recycling and Composting. This study seeks to focus on the eco-friendly attitude of college youth on their awareness and practice level.**

## OBJECTIVES OF THE STUDY

To know the personal profiles of the college youth respondents.

To identify the underlying dimensions of opinion about creating environmental awareness in college youth.

To identify the underlying dimensions about the awareness level of college youth on their Individual Eco-friendly contribution.

To study the difference between Individual Eco-Friendly Contribution Awareness (IEFCA) and Individual Eco-Friendly Contribution Practice (IEFCP) in their dimensions and in totality.

To study the influence of all personal profiles and IEFCA dimensions of College Youth on their level of Total Practice.

## RESEARCH METHODOLOGY

The researcher collected the primary data with the help of a well-designed structured Questionnaire, from 200 respondents at a reputed college using random sampling. The IEFCA and IEFCP variables were measured using 5 point Likert scale. To check the reliability of scale, Cronbach's Alpha reliability coefficient was used. The value being 0.866, scale is more consistent and highly reliable.

The questionnaire has 2 sections as follows:

**Section I:** Deals with Personal profile of respondents such as their Gender, Education of father and mother, Occupation of father and mother, monthly income of the family, number of family members, list of polluting assets, health consciousness, residential area in which they live, their food habit and involvement in social service activities.

**Section II:** It deals about 3 Sub-sections each containing ten variables. The first sub section deals with opinion on creating Environmental awareness among college youth, the next sub section deals

with the awareness level of college youth on Eco-friendly contribution and the last deals with the practice level of college youth on the same.

## STATISTICAL TOOLS USED

The data collected were subjected to Percentage analysis, Descriptive analysis, Factor analysis, Paired "t" test and Multiple Regression Analysis using SPSS Version 17.

## ANALYSIS AND INTERPRETATION

### I. PERSONAL PROFILE OF THE RESPONDENTS

Majority of the respondents (60%) are **male** whose parents are educated up to **school education (88% of fathers" and 90% of mothers")**. A sizeable group of respondents fathers' do **(33%) business** as their profession, while the majority of the respondents mothers' **(62%)** are **homemakers**. Majority of their families monthly income **(75%)** are **less than Rs.10000** and the **number of family members** in a family **ranges between two and eight**. Majority of the respondents **(55%)** have **less polluting assets**. Majority of the respondents **(57%) don't have regular exercise**, residing in **(53%) eco friendly area with vegetarian food habit (53%)** and are **not involved (52%)** in any of the social service activities.

The table 1 shows that EAC Variables with their communality values ranging from 0.587 to 0.733, have goodness of fit for factorization. **KMO-MSA value of 0.698** and **chi-square value of 309.667** with df of **45** and **P-value of 0.000** reveal that factor analysis can be applied for factorization of 10 EAC variables. Four dominant independent EAC factors explaining 62.770% of total variance have been extracted out of 10 EAC Variables. Of them the most dominant factor is Social Service Factor (**SSF**) followed by Audio Visual Factor (**AVF**), Religious Faith Factor

(RFF) and Mass Media Factor (MMF), in the order of their dominance.

The table 2 shows that IEFCA Variables with their communality values ranging from 0.313 to 0.630, have goodness of fit for factorization. **KMO-MSA value of 0.822** and **chi-square value of 441.748** with df of **45** and **P-value of 0.000** reveal that factor analysis can be applied for factorization of 10 IEFCA variables. Two dominant independent IEFCA factors explaining 47.400% of total variance have been extracted out of 10 IEFCA Variables. Of them the most dominant factor is **3RCs** Factor followed by Social Conservation Factor (**SCF**), in the order of their dominance.

#### IV. DESCRIPTIVE STATISTICS OF IEFCA FACTORS AND IEFCP TOTAL SCORES

Table 3 indicates that with lesser standard deviation values, the mean values of all 2 IEFCA factors and IEFCA and also Total scores are the robust measures of them. There is a slight negative skewness not only in each of the two IEFCA factor distributions but also in the IEFCA Total scores.

Table 4 indicates that with lesser standard deviation values, the mean values of all 2 IEFCP factors and IEFCP and also Total scores are the robust measures of them. There is a slight negative skewness not only in each of the two IEFCP factor distributions but also in the IEFCP Total scores.

#### V. SIGNIFICANCE OF DIFFERENCE BETWEEN IEFCA & IEFCP

The paired t test has been applied to examine the significance of difference between IEFCA and IEFCP not only in their factors and also in their Total Score and the results are shown in Table 5.

Table 5 indicates that there is a significant difference between IEFCA and IEFCP in Social Conservation Factor (SCF). The respondents have higher practice level

than awareness level in SCF even though both awareness and practice are at higher levels. The 3RCs and Total score of IEFCA doesn't have any significant difference between IEFCA and IEFCP despite both awareness and practice are at higher levels.

#### VI. MULTIPLE REGRESSION OF PROFILES OF THE COLLEGE YOUTH ON TOTAL IEFCP

The Multiple Regression Analysis of OLS (Ordinary Least Squares) model has been run to examine the influence of all profiles, EAC factors and IEFCA factors of Individual consumers (18 Independent variables) on their IEFCP. The results are shown in the table 6 – 8. The Independent variables are, 1. Gender, 2. Education of father, 3. Education of Mother, 4. Occupation of father, 5. Occupation of mother, 6. Monthly income of the family, 7. Polluting assets, 8. Level of Health consciousness, 9. Residing area, 10. Food habit, 11. Involvement in Social Service activities through NCC, NSS, YRC and NGOs, 12. Number of family members, 13. Social Service factor (SSF), 14. Audio Visual factor (AVF), 15. Religious Faith factor (RFF), 16. Mass Media factor (MMF) of EAC and 17. 3RCs of IEFCA and 18. Social Conservation Factor (SCF) of IEFCA.

The tables 6 - 8 show that the Multiple Correlation coefficient (R) is 0.607. The F- Value of 28.453 at P-Value of 0.000 shows that OLS Model has the goodness of fit for multiple regression run. 36.9% of the variance in Total IEFCP has been due to the changes in **Four** Independent Variables. The 3f1, Audio Visual Factor, Involvement in Social Service and polluting assets are the 4 Independent variables which significantly influence the Total IEFCP in the order of their influence.

#### FINDINGS, SUGGESTIONS AND CONCLUSION

It is found that, **creation of awareness** towards eco-friendly contribution among youth the future of the

world, is the key aspect to youth. Such awareness can be spread by involving them into various Social service activities on individual basis and collectively through NGOs.

The concept of **3RCs has to be strictly enforced** in day to day life. Nowadays, Government has implemented a welcome move of charging amount for plastic bags while shopping without carry bag. The result is that people have developed the habit of keeping carry bags made out of cotton or jute while shopping.

The study also finds that majority of the respondents are **Vegetarians, and their food habit** is not only good for their health but also to the environment in reducing the waste, because resources are overused to produce non-vegetarian food when compared to its contrary.

Polluting assets such as vehicles, air conditioners and refrigerators should be used effectively so as to control pollution. The concept of **Car Pooling and travelling in Public transport** may not only reduce pollution but also reduce traffic congestion. Of late, the awareness and practice of Car pooling has increased significantly for transporting school children.

It was also evidently clear that today youth have increasingly started **using paperless communication such as SMS**

**and E-mail**, which saves both environment and time. Rural people have to cope up with the urban people in paperless communication and adequate arrangements for it have to be facilitated through PURA of Abdul Kalam.

**To conclude,**

**“The earth provides enough to satisfy every man’s need, but not every man’s greed”**

**M.K. Gandhi**

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## II. FACTORISATION OF ENVIRONMENTAL AWARENESS CREATORS (EAC) IN COLLEGE YOUTH

**Table 1 ENVIRONMENTAL AWARENESS CREATORS (EAC) FACTORS**

Factors & their Labels	% of Variance explained	Variables	MSA	Communalities	Factor Loading
<b>Factor 1 SSF – EAC Factor</b>	<b>20.366%</b>	Extra-curricular activities	0.699	0.641	0.789
		Environment studies subject/project work	0.712	0.649	0.772
		NGOs	0.704	0.624	0.583
		Government	0.783	<b>0.587</b>	0.565

<b>Factor 2</b> <b>A V F –</b> <b>EAC Factor</b>	<b>15.149%</b>	Radio	0.608	<b>0.733</b>	0.830
		Television	0.575	0.686	0.814
<b>Factor 3</b> <b>R F F – EAC</b> <b>Factor</b>	<b>13.654%</b>	Religious faith/beliefs	0.713	0.636	0.783
<b>Factor 4</b> <b>M M F –</b> <b>EAC Factor</b>	<b>13.601%</b>	Movie/Documentary films	0.694	0.612	0.735
		Billboards/Hoardings	0.797	0.461	0.605
		Newspapers/Magazines	0.675	0.649	0.566
KMO-MSA= <b>0.698</b> Total % of Variance explained = <b>62.770</b>		Bartlett's Test of Sphericity chi-square value of <b>309.667</b> with df of <b>45</b> and P value of <b>0.000</b>			

### III. FACTORISATION OF IEFCA VARIABLES

Table 2 IEFCA FACTORS

Factors & their Labels	% of Variance explained	Variables	MSA	Communalities	Factor Loading
<b>Factor 1</b>  <b>3RCs –</b> <b>IEFCA Factor</b>	<b>28.713%</b>	Garbage Disposal	0.819	<b>0.630</b>	0.791
		Recycling	0.837	0.496	0.704
		Conserving Energy	0.824	0.534	0.651
		Optimum water consumption	0.816	0.358	0.576
		Carrying bag from house	0.844	0.340	0.511
		Consuming minimum electricity usage	0.819	0.435	0.508
		Reusing the stationery	0.838	0.393	0.507
		Using bicycles for short distance	0.871	<b>0.313</b>	0.445
<b>Factor 2</b> <b>S C F –</b> <b>IEFCA Factor</b>	<b>18.687%</b>	Paperless Communication	0.764	0.616	0.784
		Using Public transport	0.773	0.624	0.778
KMO – MSA = <b>0.822</b> , Total % of Variance explained = <b>47.400</b>					
Bartlett's Test of Sphericity chi-square value of <b>441.748</b> with df of <b>45</b> and P value of <b>0.000</b>					

Table 3

#### Descriptive Statistics of IEFCA Factors and IEFCA Total Scores

Description	3RC-IEFCA Factor	Social Conservation - IEFCA Factor	IEFCA Total Score
Mean	33.950	8.155	42.105
Std. Deviation	4.620	1.690	5.522
Median	35.000	8.000	43.000
Mode	36.000	10.000	45.000
Skewness	-0.968	-0.915	-0.865
Std. Error of Skewness	0.172	0.172	0.172
Out of Total Score	40.000	10.000	50.000

**Table 4**  
**Descriptive Statistics of IEFCP Factors and IEFCP Total Scores**

Description	3RC-IEFCP Factor	Social Conservation - IEFCP Factor	IEFCP Total Score
Mean	33.730	8.480	42.210
Std. Deviation	4.117	1.463	5.079
Median	34.000	9.000	43.000
Mode	32.000	10.000	42.000
Skewness	-0.678	-0.884	-0.710
Std. Error of Skewness	0.172	0.172	0.172
Out of Total Score	40.000	10.000	50.000

**Table**  
**Significant of Difference between IEFC A and IEFCP**

IEFC Factors	IEFC Perceptions	Mean	S.D	t-value	Df	P-Value	Inference
3 RCs Factor (3RCs)	Awareness	33.950	4.620	0.718	199	0.474	NS
	Practice	33.730	4.117				
Social Conservation Factor (SCF)	Awareness	8.155	1.690	<b>-2.647</b>	199	<b>0.009</b>	<b>S</b>
	Practice	<b>8.480</b>	<b>1.463</b>				
Total Score Of IEFC	Awareness	42.105	5.522	-0.291	199	0.771	NS
	Practice	42.210	5.079				

**S= Significant NS = Not Significant**

**Table 6 Multiple Regression results of influence of all profiles, EAC factors and IEFC A factors of college youth on their Total IEFCP**

R	R Square	Adjusted R Square	Std. Error of the Estimate
0.607	0.369	0.356	4.077

**Table 7 Analysis of Variance of influence of all profiles, EAC factors and IEFC A factors of College Youth on Total IEFCP**

Sources of variance	Sum of Squares	Df	Mean Square	F	P-Value
Regression	1891.828	4	472.957	<b>28.453</b>	<b>0.000</b>
Residual	3241.352	195	16.622		
Total	5133.180	199			

**Table 8 Profiles, EAC factors and IEFC A factors of College Youth significantly Influencing their Total IEFCP**

Profiles, EAC factors and IEFC A factors	Unstandardised Coefficients		Standardised Coefficients	t	Sig
	B	Std. Error	Beta		
Constant	19.273	0.350		55.009	<b>0.000</b>
3RCs Factor	0.632	0.224	0.180	2.821	<b>0.006</b>
Audio visual Factor	-3.336	0.264	-0.888	-12.654	<b>0.000</b>
Involvement in Social Service	2.132	0.233	0.552	9.168	<b>0.000</b>
Polluting Assets	0.559	0.183	0.157	3.050	<b>0.003</b>

# An empirical study on the personal care products usage purpose among Bengaluru Youth Consumers

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## ABSTRACT

Advertising has an extreme importance in our society, as it is ubiquitous. Personal Care Products have become the order of the day. In developed countries and developing countries, consumers have started using the PCP Products to enhance their beauty/handsomeness. Youth Consumers play a significant role in deciding the market share of a company. Therefore, it is evidently clear to study the PCP marketing segment in burgeoning country like India. Owing to the climate prevailing and the Cosmopolitan life style of Bengaluru city, the usage of PCPs is widespread among its youth. This study investigates the effects of personal profiles and PCP Influencer who kindles the interest of youth consumers to buy and the Advertisement Perception about PCP Products which result in Usage Purpose of Youth Consumers.

**Key Words:** Personal Care Products, Advertising, Youth Consumers, Rational Satisfaction, Gender Empowerment, Mass Media Influencer

## INTRODUCTION

Advertising has an extreme importance in our society, as it is ubiquitous and one cannot help bumping into it. It may stimulate the economy creating new jobs, thus being a good source of income for companies, families and countries. It is a good way of entertaining people and of enhancing people's creativity, as more creative and appealing advertisements stimulate their minds<sup>1</sup>.

### Personal Care Products (PCP)

Personal Care Products have become order of the day. In developed countries and developing countries, consumers have started using the PCP Products to enhance their beauty/handsomeness. Interestingly, male consumers have equal or more usage than female consumers. In this PCP marketing segment, youth consumers play a significant role in deciding the market share of a company. Therefore, it is evidently clear to study the PCP marketing

segment in burgeoning country like India. The urban side of India has given more importance in using the PCP Products. Owing to the climate prevailing and the cosmopolitan life style of Bengaluru city the usage of PCPs is widespread among its youth.

### Youth Consumers

Susan Ward<sup>2</sup> defines, "Advertising is attempting to influence the buying behaviour of your customer or clients by providing a persuasive selling message about your products or services." The young consumer or youth consumer market consists of kids, teenagers and young people upto the age of 25. Youth consumers offer ideas, insights and information on key issues across the whole youth market. It offers a depth and breadth of knowledge and valuable data that is unobtainable elsewhere<sup>3</sup>.

This study investigates the effects of personal profiles of **Bangalore Youth Consumers (BYCs)**, PCP Influencer who kindles the interest of them to buy and



their Advertisement Perception about PCP Products which result in Usage Purpose of Youth Consumers.

### OBJECTIVES OF THE STUDY

To know the personal profiles of the Bengaluru Youth Consumers (BYCs).

To identify the underlying dimensions of PCP Influencer (PCP I) variables among BYCs.

To identify the underlying dimensions of the PCP Advertisement Perception (PCP AP) variables of BYCs.

To find out the underlying dimensions of PCP Usage Purpose (PCP UP) variables of BYCs.

To understand the impact of Personal Profiles, PCP I Factors and PCP AP Factors of BYCs on their PCP UP Factors.

To analyse the impact of Personal Profiles, PCP I Factors and PCP AP Factors of BYCs on each of their PCP UP factors.

### RESEARCH METHODOLOGY

The researcher collected the primary data with the help of a well-designed structured Questionnaire, from 280 Bengaluru respondents using convenient sampling. The PCPI, PCP AP and PCP UP variables were measured using 5 point Likert scale. To check the reliability of scale, Cronbach's Alpha reliability coefficient was used. The value being 0.772, scale is more consistent and highly reliable.

The questionnaire has 2 sections as follows:

**Section I:** Deals with Personal profile of respondents such as their Age, Gender, Education of father and mother, Occupation of father and mother, monthly income of the family, amount spent on

PCP Products, mode of transport and hours exposed to sun every day.

**Section II:** Deals with 3 Sub-sections. The first sub section deals with PCP Influencer among BYCs, the next sub section deals with the PCP Advertisement Perception and the last deals PCP Usage Purpose of BYCs .

### STATISTICAL TOOLS USED

The data collected were subjected to Percentage analysis, Descriptive analysis, Factor analysis and General Linear Model (GLM) using SPSS Version 17.

### ANALYSIS AND INTERPRETATION

#### I. PERSONAL PROFILE OF THE RESPONDENTS

Majority of the respondents (60%) are female and their age group (75%) is below 22 years. Majority of their income (61%) are higher than Rs.20000 and spend Rs.200 (65%) for the PCP Products. Majority of them belong (72%) to nuclear families and majority of (60%) their parents have school education. Majority of the respondents fathers' (66%) are employed, while respondents mothers' (81%) are homemakers. Majority of the respondents have two-wheelers (70%) as their mode of transport and they are (85%) less exposed to sun.

The table 1 shows that PCPI Variables with their communality values ranging from 0.505 to 0.699, have goodness of fit for factorization. **KMO-MSA value of 0.756** and **chi-square value of 567.134** with df of **36** and **P-value of 0.000** reveal that factor analysis can be applied for factorization of 9 PCPI variables. Three dominant independent PCPI factors explaining 61.641% of total variance have been extracted out of 9 PCPI Variables. Of them the most dominant factor is Mass Media Influencer Factor (**MMIF**) followed by Audio Visual

Influencer Factor (**AVIF**) and Personal Influencer Factor (**PIF**), in the order of their dominance.

The table 2 shows that PCP AP Variables with their communality values ranging from **0.267 to 0.715**, have goodness of fit for factorization. **KMO-MSA value of 0.686** and **chi-square value of 887.935** with df of **153** and **P-value of 0.000** reveal that factor analysis can be applied for factorization of 18PCPAP variables. Four dominant independent PCP AP factors explaining **44.589%** of total variance have been extracted out of 18PCPAP Variables. Of them the most dominant factor is Redundant Purchase Factor (**RPF**) followed by Gender Empowerment Factor(**GEF**), Rational Satisfaction Factor (**RSF**) and Guidance Factor (**GF**), in the order of their dominance.

The table 3 shows that PCP UP Variables with their communality values ranging from **0.389 to 0.687**, have goodness of fit for factorization. **KMO-MSA value of 0.695** and **chi-square value of 222.938** with df of **15** and **P-value of 0.000** reveal that factor analysis can be applied for factorization of 6PCP UP variables. Two dominant independent PCP UP factors explaining **56.45%** of total variance have been extracted out of 6PCP UP Variables. Of them the most dominant factor is Appearance Factor (**AF**) followed by Social Acceptance Factor (**SAF**) in the order of their dominance.

#### **DESCRIPTIVE STATISTICS OF PCP USAGE PURPOSE (PCP UP)**

The Table 4 indicates that with lesser standard deviation values, the mean values of all 2 PCP UP factors and also Total Scores are the robust measures of them. There is a slight skewness not only in each of the two PCP UP factors but also in PCPUP total scores.

#### **V. IMPACT OF ALL PROFILES, PCPI FACTORS and PCP AP FACTORS of BYCs ON THEIR PCP USAGE PURPOSE FACTORS**

Multivariate analysis of General Linear Model has been applied to study the impact of characteristics of all profiles, PCPI factors and PCP AP factors of BYCs on their PCP usage purpose factors and the results are shown in table 5.

Table 5 shows that Age, Gender Empowerment factor, Rational Satisfaction factor, Guidance factor and Personal Influencer factor have significant impact on both PCP Usage Purpose factors simultaneously.

#### **IMPACT OF ALL PROFILES, PCPI FACTORS and PCP AP FACTORS of BYCs ON EACH PCP UP FACTORS**

Table 6 indicates that,

Age significantly influences both Appearance and Social Acceptance factors.

Rational Satisfaction Factor significantly influences both AF and SAF factors.

Guidance Factor significantly influences both Appearance and Social Acceptance factors.

Personal Influencer Factor significantly influences only the Appearance factor.

#### **FINDINGS, SUGGESTIONS AND CONCLUSION**

It is found that the Mass Media Influencer like T.V., Newspapers and Online advertisement has significant role to influence the youth consumers.

The common Advertisement perception of the youth consumers is that the advertisements are redundant which misleads to unnecessary purchase. They

feel they are less educated by advertisement commercials.

The Youth Consumers give more importance to their appearance than their social acceptance.

It is suggested that, the PCP manufacturers should consider age as an important criterion in deciding their marketing strategy. The youth consumers are also driven by the relative concept of satisfaction which leads to buying the product.

The consumers are guided by Guidance factor in which they feel they

have to be educated about the product and its usage. The Personal Influencer like peer group, friends and relatives play a dominant role in creating awareness about PCP Products through word of mouth.

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## II. FACTORISATION OF PCP INFLUENCERS (PCP I) AMONG BYCs

Table 1PCP INFLUENCER (PCPI) FACTORS

Factors & their Labels	% of Variance explained	Variables	MSA	Communalities	Factor Loading
<b>Factor 1 M M I Factor</b>	<b>23.652</b>	Magazines	0.797	0.620	0.771
		Newspapers	0.743	<b>0.699</b>	0.691
		Online advt.	0.785	0.531	0.687
		T.V. Advt.	0.814	0.587	0.658
<b>Factor 2 A V I Factor</b>	<b>19.661</b>	Bill board	0.722	0.616	0.776
		Radio	0.770	<b>0.505</b>	0.666
<b>Factor 3 P I Factor</b>	<b>18.328</b>	Relatives	0.745	0.673	0.810
		Beauty parlours	0.658	0.660	0.758
		Peer Group	0.744	0.656	0.576
KMO-MSA= <b>0.756</b> , Total % of Variance explained = <b>61.641</b>					
Bartlett's Test of Sphericity chi-square value of <b>567.134</b> with df of <b>36</b> and P value of <b>0.000</b>					

## III. FACTORISATION OF PCP ADVERTISEMENT PERCEPTION (PCP AP) Variables of BYCs

Table 2PCP ADVERTISEMENT PERCEPTION (PCP AP) FACTORS

Factors & their Labels	% of Variance explained	Variables	MSA	Communalities	Factor Loading
<b>Factor 1 R P Factor</b>	<b>14.447</b>	Result in Unwanted purchase	0.626	<b>0.715</b>	0.840
		Lead to Unnecessary purchase	0.619	0.648	0.781
		Government control	0.757	0.335	0.550
		False and misleading	0.743	<b>0.267</b>	0.487
		Lead to Cultural degradation	0.718	0.500	0.485
<b>Factor 2 G E Factor</b>	<b>10.412</b>	Women empowerment	0.688	0.541	0.682
		Gender equality	0.732	0.554	0.681
		Negative tendencies	0.675	0.566	0.577

		Portray real life	0.687	0.298	0.401
		Increase the price of product	0.740	0.290	0.400
<b>Factor 3 R S Factor</b>	<b>9.908</b>	Gives Satisfaction to buyers	0.730	0.486	0.625
		Scientifically proved	0.646	0.356	0.546
		Lead to skin care	0.757	0.367	0.512
		Attraction leads to purchase	0.517	0.296	0.464
<b>Factor 4 G Factor</b>	<b>9.821</b>	Entertaining	0.679	0.504	0.677
		Better product development	0.746	0.409	0.609
		Educative for buyers	0.696	0.511	0.560
		Saves time for productive buyers	0.741	0.384	0.528
KMO-MSA= <b>0.686</b> , Total % of Variance explained = <b>44.589</b>					
Bartlett's Test of Sphericity chi-square value of <b>887.935</b> with df of <b>153</b> and P value of <b>0.000</b>					

#### IV. FACTORISATION OF PCP USAGE PURPOSEVARIABLES OF BYCs

Table 3PCP USAGE PURPOSE (PCP UP)

Factors & their Labels	% of Variance explained	Variables	MSA	Communalities	Factor Loading
<b>Factor 1 Appearance Factor (AF)</b>	<b>28.499</b>	Improve Complexion	0.630	<b>0.687</b>	0.829
		Gives Pleasing Appearance	0.702	0.614	0.776
		Enhances beauty/handsomeness	0.727	0.520	0.580
<b>Factor 2 Social Acceptance Factor (SAF)</b>	<b>27.951</b>	Enhance social status	0.710	0.589	0.763
		Attracts opposite gender	0.669	0.588	0.752
		Lead to Peer group acceptance	0.757	<b>0.389</b>	0.577
KMO-MSA= <b>0.695</b> , Total % of Variance explained = <b>56.450</b>					
Bartlett's Test of Sphericity chi-square value of <b>222.938</b> with df of <b>15</b> and P value of <b>0.000</b>					

Table 4Descriptive Statistics of PCP Usage Purposes (PCP UP) Factors

Description	Appearance Factor	Social Acceptance Factor	Total Score
Mean	<b>10.486</b>	<b>9.282</b>	<b>19.768</b>
Std. Deviation	<b>2.265</b>	<b>2.389</b>	<b>3.789</b>
Median	11.000	9.000	20.000
Mode	12.000	9.000	21.000
Skewness	<b>-0.735</b>	<b>-0.134</b>	<b>-0.567</b>
Std. Error of Skewness	0.146	0.146	0.146
Out of Total Score	15.000	15.000	15.000

Table 5

**Multivariate Tests of Significant Influence of all profiles, PCPI factors and PCP AP factors of BYCs on their PCP Usage Purpose factors**

Effect	Statistics	Pillai's Trace	Wilk's Lambda	Hotelling's Trace	Roy's Largest Root
Intercept	Value	<b>0.090</b>	<b>0.910</b>	<b>0.099</b>	<b>0.099</b>
	F	<b>12.825</b>	<b>12.825</b>	<b>12.825</b>	<b>12.825</b>
	P-Value	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>
	Inference	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>
Age	Value	<b>0.036</b>	<b>0.964</b>	<b>0.037</b>	<b>0.037</b>
	F	<b>4.826</b>	<b>4.826</b>	<b>4.826</b>	<b>4.826</b>
	P-Value	<b>0.009</b>	<b>0.009</b>	<b>0.009</b>	<b>0.009</b>
	Inference	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>
Gender	Value	0.008	0.992	0.008	0.008
	F	0.990	0.990	0.990	0.990
	P-Value	0.373	0.373	0.373	0.373
	Inference	NS	NS	NS	NS
Monthly Income	Value	0.003	0.997	0.003	0.003
	F	0.373	0.373	0.373	0.373
	P-Value	0.689	0.689	0.689	0.689
	Inference	NS	NS	NS	NS
Amount Spent on PCP	Value	0.005	0.995	0.005	0.005
	F	0.591	0.591	0.591	0.591
	P-Value	0.555	0.555	0.555	0.555
	Inference	NS	NS	NS	NS
Nature of Family	Value	0.002	0.998	0.002	0.002
	F	0.200	0.200	0.200	0.200
	P-Value	0.819	0.819	0.819	0.819
	Inference	NS	NS	NS	NS
Fathers' Education	Value	0.002	0.998	0.002	0.002
	F	0.233	0.233	0.233	0.233
	P-Value	0.792	0.792	0.792	0.792
	Inference	NS	NS	NS	NS
Mothers' Education	Value	0.000	1.000	0.000	0.000
	F	0.007	0.007	0.007	0.007
	P-Value	0.993	0.993	0.993	0.993
	Inference	NS	NS	NS	NS
Fathers' Employment	Value	0.013	0.987	0.013	0.013
	F	1.680	1.680	1.680	1.680
	P-Value	0.188	0.188	0.188	0.188
	Inference	NS	NS	NS	NS
Mothers' Employment	Value	0.009	0.991	0.009	0.008
	F	0.614	0.613	0.611	1.083
	P-Value	0.653	0.654	0.655	0.340
	Inference	NS	NS	NS	NS
Mode of transport	Value	0.004	0.996	0.004	0.004
	F	0.506	0.506	0.506	0.506
	P-Value	0.603	0.603	0.603	0.603
	Inference	NS	NS	NS	NS

Exposed hours in Sun	Value	0.000	1.000	0.000	0.000
	F	0.015	0.015	0.015	0.015
	P-Value	0.985	0.985	0.985	0.985
	Inference	NS	NS	NS	NS
Redundant Purchase Factor	Value	0.020	0.980	0.020	0.020
	F	2.597	2.597	2.597	2.597
	P-Value	0.076	0.076	0.076	0.076
	Inference	NS	NS	NS	NS
<b>Gender Empowerment Factor</b>	Value	<b>0.024</b>	<b>0.976</b>	<b>0.025</b>	<b>0.025</b>
	F	<b>3.173</b>	<b>3.173</b>	<b>3.173</b>	<b>3.173</b>
	P-Value	<b>0.044</b>	<b>0.044</b>	<b>0.044</b>	<b>0.044</b>
	Inference	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>
<b>Rational Satisfaction Factor</b>	Value	<b>0.087</b>	<b>0.913</b>	<b>0.095</b>	<b>0.095</b>
	F	<b>12.287</b>	<b>12.287</b>	<b>12.287</b>	<b>12.287</b>
	P-Value	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>
	Inference	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>
<b>Guidance Factor</b>	Value	<b>0.052</b>	<b>0.948</b>	<b>0.055</b>	<b>0.055</b>
	F	<b>7.098</b>	<b>7.098</b>	<b>7.098</b>	<b>7.098</b>
	P-Value	<b>0.001</b>	<b>0.001</b>	<b>0.001</b>	<b>0.001</b>
	Inference	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>
Mass Media Influencer Factor	Value	0.013	0.987	0.014	0.014
	F	1.760	1.760	1.760	1.760
	P-Value	0.174	0.174	0.174	0.174
	Inference	NS	NS	NS	NS
Audio Visual Influencer Factor	Value	0.016	0.984	0.016	0.016
	F	2.052	2.052	2.052	2.052
	P-Value	0.131	0.131	0.131	0.131
	Inference	NS	NS	NS	NS
<b>Personal Influencer Factor</b>	Value	<b>0.032</b>	<b>0.968</b>	<b>0.033</b>	<b>0.033</b>
	F	<b>4.303</b>	<b>4.303</b>	<b>4.303</b>	<b>4.303</b>
	P-Value	<b>0.015</b>	<b>0.015</b>	<b>0.015</b>	<b>0.015</b>
	Inference	<b>S</b>	<b>S</b>	<b>S</b>	<b>S</b>

**Table 6 Univariate Tests of Significance of Influence of all Profiles, PCP I factors and PCP AP factors of BYCs on Each PPC UP Factor**

Source	Dependent Variable	AF	SAF	Source	Dependent Variable	AF	SAF
<b>Corrected Model</b>	Type III Sum of Squares	<b>406.741</b>	<b>411.835</b>	<b>Intercept</b>	Type III Sum of Squares	<b>101.533</b>	2.738
	Mean Square	<b>21.407</b>	<b>21.676</b>		Mean Square	<b>101.533</b>	2.738
	F	<b>5.429</b>	<b>4.772</b>		F	<b>25.750</b>	0.603
	Sig	<b>0.000</b>	<b>0.000</b>		Sig	<b>0.000</b>	0.438
	Inference	<b>S</b>	<b>S</b>		Inference	<b>S</b>	NS
<b>Age</b>	Type III Sum of Squares	<b>21.296</b>	<b>26.347</b>	<b>Gender</b>	Type III Sum of Squares	7.088	1.867
	Mean Square	<b>21.296</b>	<b>26.347</b>		Mean Square	7.088	1.867
	F	<b>5.401</b>	<b>5.801</b>		F	1.797	0.411
	Sig	<b>0.021</b>	<b>0.017</b>		Sig	0.181	0.522
	Inference	<b>S</b>	<b>S</b>		Inference	NS	NS

Monthly Income	Type III Sum of Squares	1.196	1.493	Amount Spent on PCP	Type III Sum of Squares	0.891	4.932
	Mean Square	1.196	1.493		Mean Square	0.891	4.932
	F	0.303	0.329		F	0.226	1.086
	Sig	0.582	0.567		Sig	0.635	0.298
	Inference	NS	NS		Inference	NS	NS
Nature of Family	Type III Sum of Squares	1.311	0.557	Fathers' Education	Type III Sum of Squares	0.572	1.142
	Mean Square	1.311	0.557		Mean Square	0.572	1.142
	F	0.333	0.123		F	0.145	0.251
	Sig	0.565	0.726		Sig	0.704	0.616
	Inference	NS	NS		Inference	NS	NS
Mothers' Education	Type III Sum of Squares	0.016	0.050	Fathers' Employment	Type III Sum of Squares	13.136	1.078
	Mean Square	0.016	0.050		Mean Square	13.136	1.078
	F	0.004	0.011		F	3.331	0.237
	Sig	0.950	0.917		Sig	0.069	0.626
	Inference	NS	NS		Inference	NS	NS
Mothers' Employment	Type III Sum of Squares	5.651	6.003	Mode of Transport	Type III Sum of Squares	1.194	3.847
	Mean Square	2.825	3.001		Mean Square	1.194	3.847
	F	0.717	0.661		F	0.303	0.847
	Sig	0.489	0.517		Sig	0.583	0.358
	Inference	NS	NS		Inference	NS	NS
Exposed Hours in Sun	Type III Sum of Squares	0.001	0.134	RPF	Type III Sum of Squares	15.213	3.232
	Mean Square	0.001	0.134		Mean Square	15.213	3.232
	F	0.000	0.030		F	3.858	0.712
	Sig	0.988	0.864		Sig	0.051	0.400
	Inference	NS	NS		Inference	NS	NS
GEF	Type III Sum of Squares	9.306	13.719	RSF	Type III Sum of Squares	<b>81.221</b>	<b>33.164</b>
	Mean Square	9.306	13.719		Mean Square	<b>81.221</b>	<b>33.164</b>
	F	2.360	3.021		F	<b>20.598</b>	<b>7.302</b>
	Sig	0.126	0.083		Sig	<b>0.000</b>	<b>0.007</b>
	Inference	NS	NS		Inference	<b>S</b>	<b>S</b>
GF	Type III Sum of Squares	<b>24.456</b>	<b>46.254</b>	MMIF	Type III Sum of Squares	4.552	12.991
	Mean Square	<b>24.456</b>	<b>46.254</b>		Mean Square	4.552	12.991
	F	<b>6.202</b>	<b>10.184</b>		F	1.154	2.860
	Sig	<b>0.013</b>	<b>0.002</b>		Sig	0.284	0.092
	Inference	<b>S</b>	<b>S</b>		Inference	NS	NS
AVF	Type III Sum of Squares	2.644	17.490	PIF	Type III Sum of Squares	<b>32.634</b>	4.958
	Mean Square	2.644	17.490		Mean	<b>32.634</b>	4.958

					Square		
	F	0.670	3.851		F	<b>8.276</b>	1.092
	Sig	0.414	0.051		Sig	<b>0.004</b>	0.297
	Inference	NS	NS		Inference	<b>S</b>	NS
Error	Type III Sum of Squares	1025.202	1180.876	Total	Type III Sum of Squares	32218.000	25717.000
	Mean Square	3.943	4.542		Mean Square		
Corrected Total	Type III Sum of Squares	1431.943	1592.711				



# Real Option versus Traditional Methods: R&D Project Selection

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## ABSTRACT

Capital budgeting is one of the most important decisions faced by the financial manager. Prior studies spanning the past four decades show financial managers prefer methods such as internal rate of return or non-discounted payback models over net present value. Most financial managers prefer to use multiple tools to evaluate a project investment decisions. Research and Development (R&D) projects are characterised by high cost, high risk, and long lead time, interdependency and sequence of implementation. Further, these projects have various flexibilities available to the management such as option to delay, cancel, or undertake subsequent decision. The widely used DCF and other traditional methods fail to correctly assess the real value of these projects. In view of various limitations of conventional methods, Real Option Valuation (ROV), a more appropriate technique which incorporates impact of flexibilities, has been used for evaluation of projects. This methodology is based on the famous option pricing principles developed by Black and Scholes (1973).

**Keywords:** Capital budgeting, net present value (NPV), internal rate of return (IRR), Real Option Valuation (ROV);

## INTRODUCTION

Evaluation of R&D project portfolio is a complex task, which can enhance the performance of a company considerably. The management choices are crucial within such a business, and investments need to be carefully made, and followed on schedule and cost with respect to the market, as they are usually multiyear projects. Improving the effectiveness of a firm includes several factors, which can be considered as a portfolio of projects (a program), which lead to better performance, availability and operating time. Some of these tasks require R&D activity, and along with this a certain level of risk is associated. Hence, investing in such a program can be quite complex, alternating decision backgrounds time

wise, competition wise, technology wise, cost wise, demand wise etc...

All companies have a limited budget to spend. In order to optimize their profits, projects need to be carefully selected. Unfortunately, this task can become quite complex, dealing with both, portfolio's risk and profits. For these reasons it is very important to have a good investment evaluation criterion which efficiently measures the capacity of projects in order to bring a company to success. In this process, it is crucial that management use accurate methods that will result in the maximization of shareholder wealth. Over time, managers have used various commonly capital budgeting models and cost of capital estimations procedures. This study re-examines the capital budgeting decision

methods used by the companies. Management views net present value (NPV) as the most preferred capital budgeting tool over IRR & PP.

From the commonly used criteria in capital budgeting, a new approach has recently emerged in the R&D sector: "Real Options". This approach accounts for the flexibility within the life-time of projects, always available to managers who react to specific information appearing through time in order to ensure projects' success.

Real Options are derived from options in finance. Real Options differ from financial options as they are often not tradable; e.g. a company cannot sell to an external party the right to expand its factory. Real Options can be defined as the right for a firm to either develop, delay (continue R&D), wait, or abandon a specific project; they are a strategic tool applicable during the development of a project. Moreover, Real Option could help assess the strategy of an R&D portfolio, through analysing and prioritizing the correct factors that would lead specific projects to become more successful, hence launching the right projects at the right time, engineered to the right level to create strong competitiveness while containing adequate costs.

Real options methodology, the factors which would influence the management team's decisions on "Go" and "No Go" projects can be formalized and included in a standard methodology. Even though this approach seems superior to traditional evaluation criteria, it is not an industry standard yet. This is primarily due to the fact that only a few case studies have been published on the topic, and hence the method has remained very academic. This research paper aim is to compare an evaluation methodology based on real options method and traditional capital budgeting techniques through a ROA example.

## Traditional Evaluation Methods

Over the past few decades, financial research has recorded how business use capital management methods and how large corporations determine the cost of capital used in capital budgeting decisions. Financial managers and academics have not been in full agreement as to the choice of the best capital budgeting method. There are numerous theories to do so; the most commonly used methods in industries are:

- Payback Period (PP)
- Net Present Value (NPV),
- Profitability Index
- Modified Internal Rate of Return (MIRR)
- Discounted Payback
- Accounting Rate of Return (ARR) and
- The Internal rate of return (IRR).

Miller (1960), Schall, Sundam, and Geijsbeek (1978), and Pike (1996) report payback technique as the most preferred method, while Istvan (1961) reports a preference for accounting rate of return (ARR). Mao (1970) and Schall et al., (1978) specifically point to NPV as the least popular capital budgeting tool; a result in contrast to modern financial theory. Klammer (1972) reports a preference for general discounted cash flow models, and subsequently, the overwhelming majority of published research indicate management prefer the use of internal rate of return (IRR) over all other capital budgeting methods. Eight studies dating from 1970 to 1983 show profitability index, a ratio of present value and initial cost, to be the least most popular capital budgeting tool. Jog and Srivastava (1995) and Pike (1996) indicate a decreased acceptance of ARR. Interestingly, throughout the literature, NPV has always trailed IRR in management preference. Managers have

argued the perception of a percentage return is more easily understood and comparable than an absolute dollar value increase in shareholder wealth. Therefore, in the past, managers have chosen IRR over NPV. Evans and Forbes (1993) argue management view IRR as a more cognitively efficient measure of comparison. In a comparison of past studies, it is seen that managers are moving toward NPV as a method of choice, but never to the level of IRR. Academics have long argued for the superiority of NPV over IRR for several reasons. First, NPV presents the expected change in shareholder wealth given a set of projected cash flows and a discount rate. For mutually exclusive projects, there is some dispute over the appropriate method. Second, when cash flows come in over a longer time period, NPV assumes the intermediate term cash flows are reinvested at the cost of capital. Internal rate of return, on the other hand, assumes the intermediate term cash flows are reinvested at the IRR, which for any positive NPV project is higher than the cost of capital. Finally, NPV is not sensitive to multiple sign changes in cash flows. It is a method that presents the expected dollar amount that shareholder wealth would increase or decrease upon the acceptance of a project.

The main characteristics of the NPV (based from Discounted Cash Flows - DCF methods) are to account for both investments and revenues, while discounting them with a specific cost of capital which can be determined from various methods (Weighted Average Cost of Capital – WACC, or the Capital Asset Pricing Model - CAPM). It is important for one to know that even for the NPV, several years were needed before the method was accepted in industry (Klammer, 1972). However, still today many discussions arise on several of its

parameters, such as for instance the determination of the cost of capital; for which the slightest variation could largely affect the overall profits of the project. Using either the WACC or the CAPM, the NPV evaluation considers projects as being worthwhile in case their end NPV values are positive; meaning that these investments earn more than their required rate of return. Even though the application of the NPV criterion has reached a state-of-the-art level, the approach has limitations. First, it assumes static parameters and static assumptions, hence neglecting the uncertainties inherent in every parameter. Then, it is difficult for the approach to accumulate the analysis of scenarios; usually best, most likely and worst case scenarios are analysed, without knowing what would happen in between and with what probability of occurrence. Furthermore, the approach ignores the value of technology and risks embedded in the development of innovations (technical challenges, investments, logistics, etc). But most of all, the methodology (as all traditional project evaluation methods) neglects the value of managerial flexibility present in all real investment. In reality, managers always have the ability to modify strategies by responding to technology and market opportunities in order to increase project's value. Not considering this flexibility could yield inaccurate project's profit evaluations.

### **Shifting paradigm of project evaluation**

In the past few decades the importance of intangibles assets has significantly increased in relation to tangible assets. An intangible asset, like any other asset is a source of future benefits, but in contrast with tangible assets, intangibles lack a physical embodiment. The intangible have unique potential to generate vast economic value and growth. The

increasing intensity of business competition enhances the investment in innovation. Thus, intangibles are crucial to survivorships and growth of business enterprises. In view of the above facts, the thrust of capital budgeting is now shifting towards investment into intangible assets and managers must make sensible decisions about the balance between tangible and intangible investments. Within the last quarter century it has been observed (Friedman, 2010) and indicated in Figure 1 that physical and financial accountable assets (tangible assets) comprise less than 20% of the true market value of the average firm in USA. In India, too, we have witnessed a similar phenomenon.

Further, this unique ability of intangibles to enable companies to withstand competitive pressures and prevail is responsible for their remarkable ascendance to the role of premier corporate and national assets. In a sense, intangibles are high-risk/high-reward assets. Projects having high cost, high risk and long lead time have various flexibilities available to the management such as option to delay, cancel, or undertake subsequent decision. The widely used DCF and other traditional methods fail to correctly assess the real value of these projects. In view of various limitations of conventional methods, Real Option Valuation (ROV), a more appropriate technique which incorporates impact of flexibilities, has been used for evaluation of projects. This methodology is based on the famous option pricing principles developed by Black and Scholes (Black & Scholes, 1973).

### **New Project Evaluation Technique**

The applicability of traditional analysis versus the new analytics across a time horizon is depicted in Figure 2. During the shorter time period, holding

everything else constant, the ability for the analyst to predict the near future is greater than when the period extends beyond the historical and forecast periods. This is because the longer the horizon, the harder it is to fully predict all the unknowns, and hence, management can create value by being able to successfully initiate and execute strategic options.

A real option gives the right, but not the obligation, to undertake some business decision; which generally is the chance to make, abandon, expand or contract a capital investment. Real option is used as a business strategic formulation tool which fits in Figure 2 (shown in green colour). For example, the opportunity to invest in the expansion of firm's factory, or alternatively to sell the factory, is a real option. The classification of real options is given below:

- **Option to abandon, exit option**

The decision maker has the right to abandon the project in a situation when there are unfavorable external conditions or internal ones (financial situation).

- **Option to defer/delay**

Depending on the company situation, it may defer the decision to invest and the investor does not have to make a „now or never“ type of decision.

Sometimes, in order to minimize investment risk, it is worth waiting for the development of the situation in the market environment, and when it develops positively - investing.

- **Option to contract**

In changing market conditions, it is useful for the company to have a possibility to actively manage the production volume. The expected benefit is the reduction of some costs.

- **Option to expand**

It exists when a company has a possibility to speed up the project realization. Realization of option to expand

requires additional investment expenditure.

- **Option to switch, flexibility option**

This is related to the possibility of suspending and starting again activities. It is usually defined as flexibility option, as it allows us to adjust to varied demand structure through changes in production, service or technology range. In practice it allows us to quickly adjust to the current trend (product flexibility).

- **Growth option**

It mostly concerns the projects whose realization gives the investor the possibilities to undertake other related projects. It usually requires additional expenditure. It is most frequently treated as a compound option, as it is connected with realization of the projects divided into stages.

### **The comparison of real options to traditional valuation methods**

Traditional approaches to valuation assume static ability to make decisions, while real options predict a dynamic series of future decisions, in which a managing person has a lot of flexibility in acting and thus can quickly adjust to changes taking place in the economy. The DCF method does not take into account active management of the company related to flexibility and enabling us to modify the strategy during its execution, due to changing internal or external conditions.

In practice, managers make investment decisions in constantly changing circumstances and the options available to them are to make, defer or resign from a particular course of action (Dzyuma, 2012). The real options method corrects the shortcomings of the discounted cash flow method, which, due to not taking into account the value of options portfolio and the flexibility it offers in future actions, may underestimate the

real value of the company. In both cases the strategy of making investment decisions is totally different. The DCF model is a static valuation method; therefore decisions are made on the basis of possessed information about future events. The real options model, on the other hand, provides flexibility in the process of making decisions, which, in turn, depend on changes taking place in the economy.

Traditional methods often lead to wrong valuation especially in the sectors of modern technologies, mineral resources, R&D, and pharmaceuticals a more reliable valuation is obtained while using the real options methodology. They offer the possibility of calculating the value of the investment project reflecting the managerial decisions taken in the course of its realization. Real options eliminated the main weakness of the NPV method, which assumes that investment expenditure on realization of a venture is irrevocable. The theory of real options does not deny traditional valuation methods; on the contrary, it relies on their results.

### **Application of Real Option Valuation (ROV)**

Industries using real options as a tool for strategic decision making started with oil and gas as well as mining companies, and later expanded into utilities, biotechnology, pharmaceuticals, and now into telecommunications, high-tech, and across all industries. Following are some very brief examples of how real options have been or should be used in different companies.

Automobile and Manufacturing Industry

Computer Industry

Airline Industry

Oil and Gas Industry

Telecommunications Industry  
 Utilities Industry  
 Real Estate Industry  
 Pharmaceutical R& D Industry  
 High-Tech and e-Business Industries

### **Real Option: An example**

A pharmaceutical company is offered the rights to a new chemical compound that holds promise for a new drug. The compound has been found by specialist research company and still needs further exploratory research and additional research in development, before any production investments can be discussed. This means that cash in-flows from this R&D project are many steps away (Collan, 2012).

The sales price of the rights to the compound is \$15000. The question is, if the company should buy the compound at the offered price – what is the value that the company thinks the rights are worth, when it must invest in further R&D and production before the compound will bring any revenue? The problem is a classical R&D project investment problem with a compound structure of many future stages.

#### **First Stage – initial investment into exploratory R&D**

The largest unknown in the exploratory R&D stage is the duration of the research. The cost of the research team is contracted at \$500K for each six months spent and the overall cost is therefore dependent on the time. The managers at the company estimate the best-guess duration for the exploratory research to be 2.5 years (five six month research periods). The minimum possible time estimated is three periods (1.5 years) and the maximum possible seven periods (3.5 years).

#### **Second stage – investment into compound development R&D**

The development R&D duration is uncertain, but according to the company managers less uncertain than exploratory R&D duration. The managers expect that development R&D will take a year. The best possible scenario is six months and the worst possible scenario 18 months. The development R&D is more expensive than the exploratory R&D, costing a \$1 million for every six-month period.

#### **Third stage – production investment and operation of the investment**

The production investment has a fixed cost of \$20 million and it will be made in six months directly after the completion of the development R&D and will have the duration of six months. The production line will start production immediately after completion.

The sales of the product are estimated to last for 5 years after the completion of the production line. Three scenarios for the operational cash-flow are estimated (best-guess, maximum-possible, and minimum-possible). For simplicity these remain constant for the five years. The managers of the company have decided to discount cost cash-flows at a five percent (5%) discount rate and have assessed the risk facing the revenues to be reflected by a fifteen percent (15%) discount rate. The above information is collected into Table 2.

The managers are expecting that the project has a 50% chance of going all the way – this is reflected in the inflows by a correction term that multiplies the inflows by 0.5. The resulting cash flow table is visible in Table 3. A graphical presentation of the resulting cumulative NPV is available in Figure 3. We can see from Figure 4 that the profitability of the project given the above information does not look too good. The best-guess scenario is

below zero and the worst possible scenario is greatly negative. This means that the expectation is that if a project like the one above is started it will fail. The right question to ask is how much should we invest in a project with this kind of expectations?" We can reach a good answer by using the pay-off method.

From Figure 4 we can see that a part of the project pay-off distribution is on the positive side. This means that the project has potential, even if the expectation is for the most part negative. The pay-off distribution includes the cost of all investment, R&D in two phases and the production line investment that must be put into the project. This means that still after all the investments there is a possibility that the project will turn profit – this is also shown by the success ratio 17/100. The pharmaceutical companies managers are interested in the value of this potential that is obtained by purchasing the rights to the chemical compound that allow the company to start the R&D project presented above. The asking price of \$15000 can be compared to the value of the potential obtained by having the rights; the value of the potential is given by the real option value and it is about \$44000. This tells us that the asking price is acceptable, taking into consideration the value of the three-stage project that it gives a possibility to start.

### **Milestone evaluation for an R&D project with the pay-off method**

It is very common in companies that do R&D to set milestones for the R&D projects. What this means is that the projects are re-analysed according to a predetermined schedule and a decision to continue with the project or to abandon the project is made. The milestone-checks are made to ensure that projects that no longer are economically or technically viable do not receive further funding. The

pay-off method is an excellent tool to help also in milestone evaluations, because it not only shows the changed situation with the new data, but also gives the possibility to compare the economic viability of projects with data from consecutive milestones.

To illustrate how the pay-off method can help let's look at what the R&D investment that we have already looked at above looks at the first milestone, six months after it was started. What has happened before the milestone is that the managers have decided to purchase the rights for the chemical compound and started the R&D project with the expectation shown in Figure 4. The exploratory R&D is showing promise and is going along slightly better than expected in the best-guess scenario. The expectation behind the worst possible and the best-guess duration for the exploratory research duration have also changed. There are, however, no changes to the expectations regarding the development research duration, investment cost, or the expected revenues. Now in the milestone-analysis the changes in the situation, the technical and the economic advances in the project are "factored in" and a new analysis on the viability of the project can be done.

### **CONCLUSION**

All industrialised economies are becoming knowledge based: competitive advantage and organisational performance is moving from investment in physical assets and low skilled labour to investment in intangible knowledge based assets such as R&D, design, brand equity, software, and human and organisational capital. In changed business scenario where high uncertainty and risks are involved, the traditional methods under estimate the projects. Real options are an indispensable tool in valuating investment

ventures, as the contemporary world creates highly uncertain market conditions and managers appreciate flexibility in their decisions. The methods based on discounted cash flows do not take into consideration active company management or flexible actions related to the possibility of modifying plans and, as a result, changing external and internal conditions.

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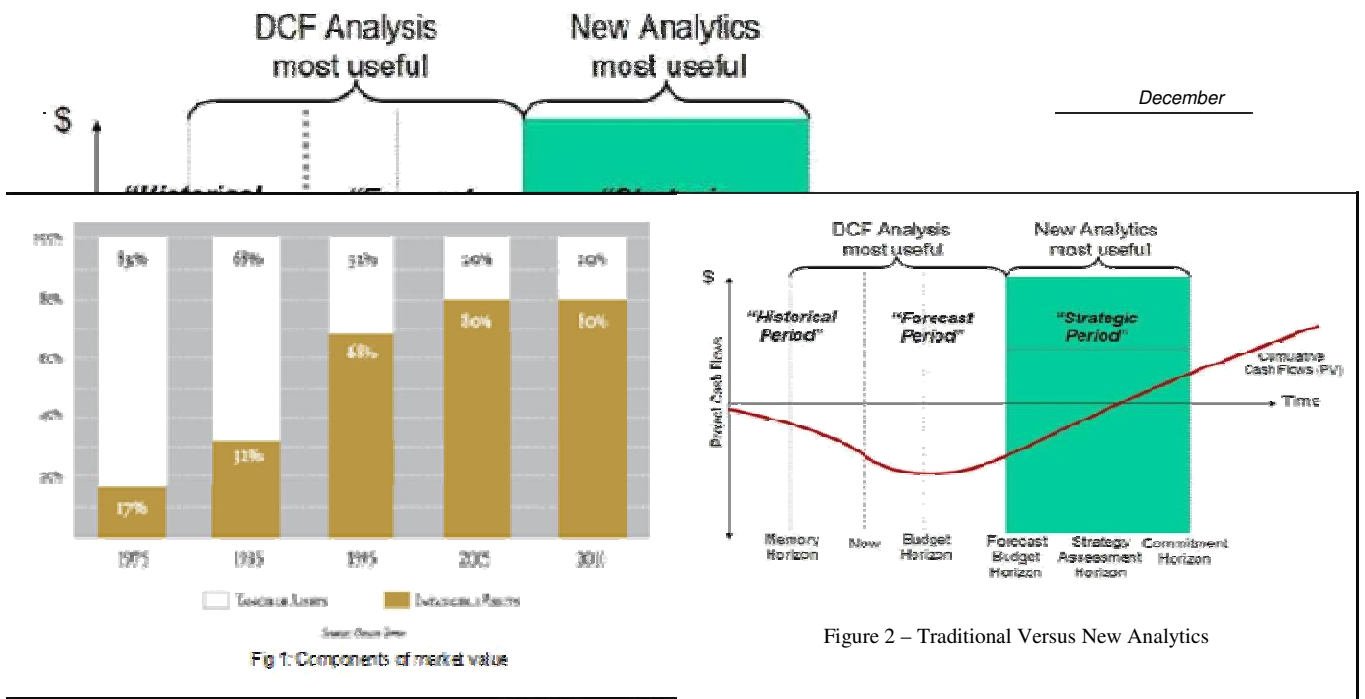


Fig 1: Components of market value

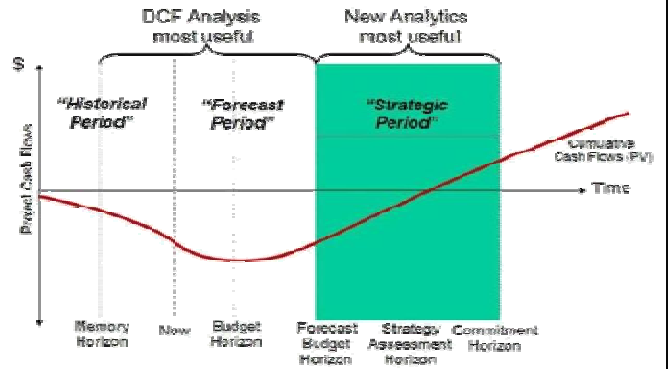


Figure 2 – Traditional Versus New Analytics

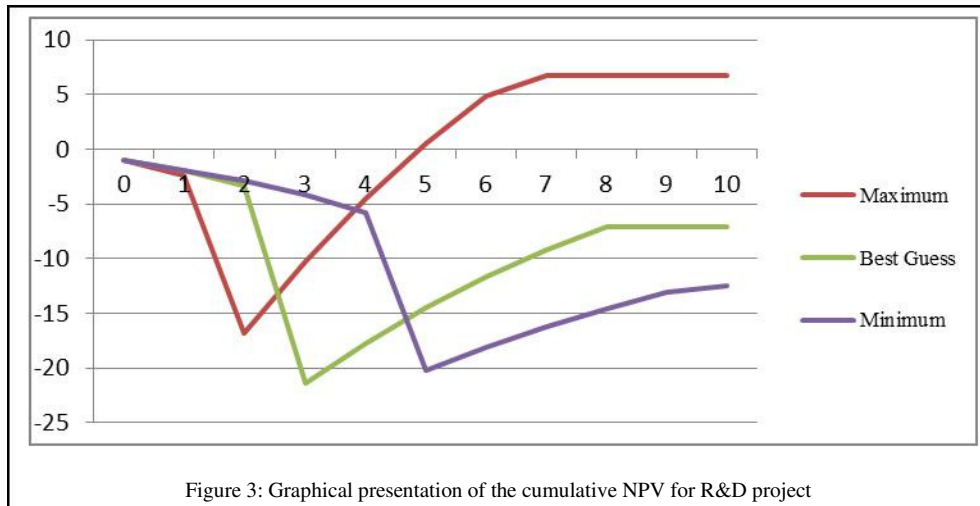


Figure 3: Graphical presentation of the cumulative NPV for R&D project

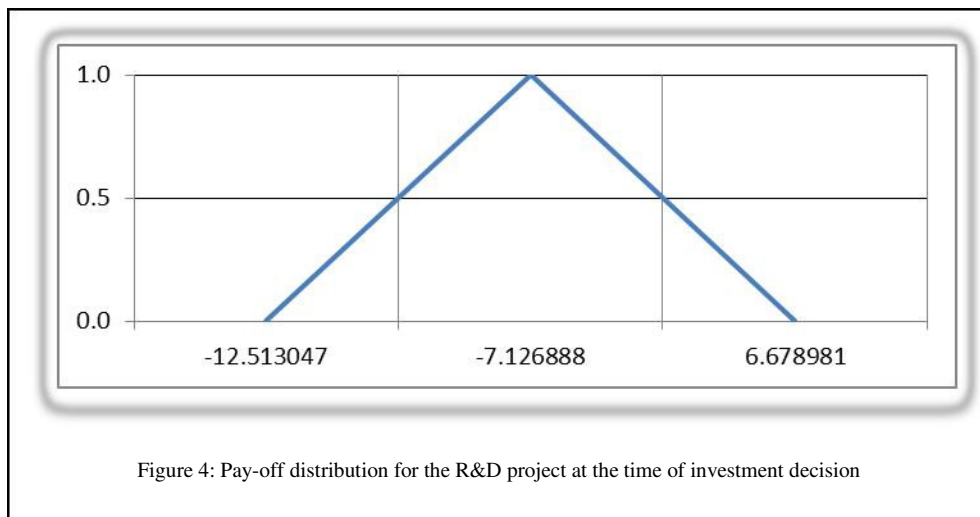


Figure 4: Pay-off distribution for the R&D project at the time of investment decision



## Present value scenarios of the yearly revenue from sales in million

Year	0	1	2	3	4	5	6	7
<b>Maximum</b>	0	0	3.780718	6.575162	5.717532	4.971767	4.323276	1.879685
<b>Best Guess</b>	0	0	0	0	3.716396	3.231649	2.810129	2.443591
<b>Minimum</b>	0	0	0	0	0	1.242942	2.161638	1.879685

## Cumulative yearly net present cash flow scenarios for the investment

Year	0	1	2	3	4	5	6	7
<b>Maximum</b>	-1.00000	-2.428571	-16.788443	-10.213280	-4.495748	0.476019	4.799295	6.6789
<b>Best Guess</b>	-1.00000	-1.952381	-3.312925	-21.453515	-17.737119	-14.505470	-11.695340	-9.2517
<b>Minimum</b>	-1.00000	-1.952381	-2.859410	-4.155167	-5.800572	-20.228153	-18.066515	-16.1868

Best Guess NPV	-7.126888
Maximum Possible NPV	6.678981
Minimum Possible NPV	-12.513047
Success Ratio	17/100
ROV	0.043862
Mean NPV	-5.723603

# Women-Centric Inclusive Hr Policies at Workplace as an Empowerment Tool

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## ABSTRACT

Women Managers, by their sheer achievements so far, have proven that they bring in excellence towards work place and society besides being a major source of contribution towards economic growth. What they expect from the society and at workplace is a mentoring, coaching, and networking opportunity. It is important to distinguish and address individually the more tangible barriers to participation of women in the field, (such as Work-Life Balance) and the problems of perceived competence in doing the job, or the unwritten gendered work cultures. Initiatives need to address the issues that appear to disadvantaged women at a practical level (for example, childcare, better access to finance, entrepreneurial opportunities), whilst not neglecting the importance of building confidence, providing inspiration and building female-friendly networks and spaces. Networks, visibility, and learning are all critical to achieving gender inclusion and are all forms of empowerment. Women empowerment is a global theme now. Indian challenges are not far away. Empowerment strategies offer a good way to address the tensions emerging from gender inclusion through the judicious use of women-friendly spaces open also to men. These empowerment strategies also need to be informed about the wants and needs of target users. The flagging of these strategies also often touches upon their ability to listen to and talk to various gendered users in an original and effective manner. Empowerment and other inclusion strategies, by increasing the proportion of women, may promote further changes in gendered cultures and practices and create a more welcoming space for women. The empowerment of women needs to be endorsed at industry and company levels as well as by individuals themselves leading to higher productivity, organizational effectiveness, and harmony.

An attempt is made in this Paper to knit together and summarize some of the conceptual ideas, thoughts, reflections, and points that are available already on the theme of rediscovering Indian women's leadership potential and to come up with HR Policies at workplace that are at once women-centric, empowering, and inclusive.

## INTRODUCTION

The role of women in economic value creation has not been recognized and given as much attention as it deserves. Whether it is providing moral support to the male partners to pursue their careers and professions, supplementing family income due to dire necessities or pursuing careers-in every scenario that leads to economic value creation, woman has been playing an invaluable role. While until recently,

women were predominantly contended with playing the supportive role in economic value creation, over the recent years, there has been a dramatic change in the number of women who have entered into the Indian corporate world. According to NASSCOM the ratio of men to women in the IT/BPO sector alone was 65:35 in the year 2010. Now we find more and more women with rich experiences in various walks of life-an institutional builder, a business entrepreneur, a corporate manager/leader, an

educationist, a bureaucrat, and a social entrepreneur with a challenge to excel in each role. They have been successfully balancing their roles in an environment with multiple pressures and effectively navigating their way through with the concomitant pleasures and pains.

A study done by Watson Wyatt predicts that the younger generation of women in India is expected to achieve educational parity with men by 2016. With everything being equal, increasingly corporate recruiters are keen to hire more women graduates from Business Schools recognizing the unique characteristics of women-empathy, flexibility, and persistence that are enablers for successful management practices. An increasing number of women are now entering into the corporate portals and many of them, unlike in the past, do not consider the opportunity to work as a short-term phenomenon but are focused on building long-term careers. As a result of this, a new corporate culture is evolving that calls for new approaches to management, development, and retention. Fundamentally, there is now a need for corporate leadership to understand the new „identity“ of the corporate women, their aspirations, and put in place new management practices to keep pace with the change in gender ratio and the resultant work environment. Women have definitely learned to adapt with evolving times. For every successful woman leader, there are, of course, many who do not make it to the top. The fundamental reason for this lies in the fact that a significant number of women are unable to balance work and family requirements and are forced to abandon corporate careers in preference to home needs. In this backdrop, we need to attempt and gain an insight into various dimensions that have an influence on the careers of women in

the corporate sector with special focus on their leadership roles and issues.

### **MENTORING WOMEN MANAGERS THROUGH ROLE MODELS**

In the area of mentoring, companies have a big role to play. An effective mentoring program has to be a complex and multidirectional one with internal and external programs. Through a wider community of women managers, we need to design mentoring programs that are formal, informal, or facilitated ones. It may be one-to-one matching of mentors and mentees or an informal facilitation where a mentee identifies one or more mentors and builds a relationship. In either case, it is imperative that the company support it through policies, systems, and processes. The program must be rewarding for both mentors and mentees. While they give mentors recognition as well as visibility as leaders and diversity champions, mentees get career growth.

What has been found to be most helpful is to have Role Models around who could inspire them and especially during difficult times, help them remain steadfast with their goals. At times, Role Models may not exist in their own organizations and may not be approachable. Therefore, the role of mentors in nurturing women talent becomes important. Mentoring has been of late a much sought after tool to groom leaders and the same tool could be used in the context of women effectively. Listening, counseling, and coaching have found to be helping women specially when they have to battle on their own in unchartered territories and with wise and timely counsel they can definitely manage to get past the hurdles in their careers. Even today, choice for education streams is made in India more by peer pressure and societal pressures than by recognizing one's true potential and talent. Very often, women tend to wander into the

corporate world as “Alice in Wonderland” not fully equipped to deal with the expectations and the realities of the corporate world. In this context, we need to examine the challenges involved in making the right career decision and the attention to self-development in pursuit of career goals. Mentoring is now widely recognized in the West for its impact in leveraging personal and as a highly effective way to quickly ramp up an employee’s performance. Some of the reasons for mentorship programs are global competition, „work-life” balance, and changing economic status of the country.

In the age of globalization, organizations need talented people and should also know how to retain their manpower. A mentor aims at helping others by improving the quality of talented people in his organization. Mentor programs can be personalized into formal or informal; age restricted or designation specific. While there can be male or female mentors, the latter are more successful as women in general are intuitive, sensitive, and emotional, which is the key to the success of women. The booming economy demands manning-and suddenly, despite our amazing advantageous demographics, we are facing an acute shortage of talent. The new refrain is “Talent Hunt”. Someone whose prime motivation is the protégé’s success, someone immune from but aware of company dynamics and politics, someone who takes time to listen and to guide the mentee without any personal or political agenda, someone who is unbiased and non-threatening. Mentoring is a relationship in which latent competencies are unfolded, potential skills are honed and both parties-the mentor and the mentee-experience mutual learning. The West has numerous examples of successful women mentors.

The same will apply in India as the mentoring space opens up.

Effective mentoring requires a lot more than common sense and enthusiasm. As in sport, companies too can reclaim their glory or market position if leaders were to let the spotlight shine on the team members instead of hogging the limelight themselves. After all, we all know that Gandhiji became a „Mahatma” by serving, not by seeking. There is a need to also expand the role of successful women to be mentors to other aspiring women in the organization. A process of well-established mentorship will enable women to build their competencies, enhance their visibility and develop the leadership competencies to become effective leaders in their organizations. Mentorship can be a very effective tool for leadership development. Successful women in the organizations who could be the mentors need to be trained in how to mentor younger women. Organizations can do a lot of things to ensure that they have a good representation of women at all levels of leadership in the organization. Women too need to look at their own career growth in the organization with equal interest and passion.

### **STERREOTYPES IN SOCIETY ABOUT WOMEN MANAGERS**

If we need to understand the profile of the modern woman, we need to first of all understand the stereotypes that society has created and also about the deep-rooted myths about working women. Women achievers in the corporate domain differ from those who have chosen to be entrepreneurs. Entrepreneurship brings in its wake associated risks and joys. We need to understand how women embrace risks with boldness and surmount the challenges with dedication to cause and achievement orientation.

Several leading women in corporate roles faced prejudices based on their sex/gender during the early years of their corporate career. But today, the scenario is changing. Corporate have started welcoming women and also encourage them to move up the ladder because today's work environment needs some of the traits that women are born with like sensitivity and adaptability and not the male aggression. However, managing the home, children, and work is still a challenge for most women which they manage through their skill of multitasking. This is the right time for women to make a mark for themselves and also for organizations to understand that ignoring the potential of women today is a fatal mistake

### **WOMEN MANAGERS AND GENDER DIVERSITY**

What do Indra Nooyi, Kalpana Moraparia, and Naina Lal Kidwai have in common? They are all women leaders who have broken through the proverbial, yet a very real glass ceiling in the corporate world to reach the top. However, it would be premature to celebrate the end of male domination in our society in general, and in the corporate world, in particular. Survey after survey has shown that despite an increasing participation of women in organized sector, they still represent only around a third of the work force. Clearly, it is not a matter of breaking the glass ceiling-the barriers of entry and subsequent retention exist at all levels. And this is what needs to be addressed through appropriate HR policies. It is important that an increasing participation of women in the corporate sector is a goal worth striving for.

The fact that this goal is desirable from a societal point of view is obvious, but, there is another aspect which is being

increasingly recognized in corporate boardrooms-having a more gender-diverse workforce and leadership makes eminent business sense. It is now clear that diversity of ideas in a corporate environment leads to better business decisions and hence business performance. With women increasing in the workforce, managing the gender diversity is a new challenge for business leaders. This calls for new policies, new mindsets, and new work ethics. Several organizations now have in developed women-friendly policies with the objective of attracting and retaining women in large numbers. We need to examine the issues in an effort to facilitate gender diversity and get the interesting insights from the case studies of successful organizations that have been sensitive and responsive towards women's needs. Ability to traverse and manage diversity within and outside the organization is a necessary competence for effective leaders, more so in the current context of *boundaryless* organizations and increased engagement with society and the environment.

What can be done both at the societal and the corporate level to bring a more balanced gender ratio in the workforce at all levels? For this, it is important to be sensitive to the problems faced by women, not only as employees, but **women qua women**-the problems are real, though frequently „invisible“. We need to create a homely environment at the workplace. One of the characteristics of our urban society is that it is a society in transition. At the family level, joint families are no longer the norm. However, at a societal level, we are far from providing the support structures needed for nuclear families. Crèches, day boarding and child care facilities are all sadly lacking in our cities. In the absence of an extended family to take care of the children, women frequently leave their jobs when they start

their families. Companies could provide the physical infrastructure to enable women to continue with their careers.

In addition, it is also critical for women to feel safe and secure in their workplace. Apart from the physical infrastructure, it is also important to provide more flexible and gender-inclusive policies to foster growth of women workforce. Strict policies for dealing with sexual harassment in all its forms are fast becoming the norm in most companies. These need to be strengthened, and well publicized. It is not just enough to have policies but also to ensure that women have the comfort level and confidence to speak out against any harassment they face. Companies need to evolve mechanisms to engender this feeling with support groups, counselors, and other semi-formal structures. Long leaves of absence without detriment to their career growth, sensitive and flexible transfer policies, counseling services, are some of the features that will make women comfortable in the workplace and hence more productive. Of course, being sensitive to these issues should not mean that women should be placed at a disadvantage when it comes to making decisions about their suitability for certain positions.

### **FOSTERING AN ENVIRONMENT TO ENALBE ORGANIC WOMEN LEADERSHIP**

Focus, vision, planning, and persistence are essential in order to build a successful career. While these are important ingredients for career planning for anyone, this process assumes significance for women as many women would be treading on the paths where their mothers and peers may not have done so and therefore would not be able to rely on experience of others. The rise of global leaders like Nooyi, Kalpana, and

Kidwai is of course laudable. Every such achievement by women is in itself worthy of praise since they provide role models for others. However, it is important to realize that companies need to foster an environment to enable organic leadership from amongst their women employees. Organically grown leadership, not just at the top levels, but at all levels, will lead to more diversity in thought and organization, which will ultimately add to the growth in quantitative and qualitative terms while also fulfilling an important societal responsibility. According to one of the Catalyst Bottom Line Reports, Fortune 500 Companies with more Women Board Directors experienced significantly higher financial performance, on average, than those with the lowest representation of women board directors. It also says companies with three or more women directors showed charmingly stronger-than-average performance.

From practical viewpoints that are available as to what is happening in corporate today, we can safely conclude that though women leaders find it difficult to move up the corporate ladder, the good news is that the numbers are much higher than what it used to be in the past. It is difficult for a woman to balance work and her personal life especially during the difficult years of childbearing and early years of parenting. Yet, there are women who are ready to fight the battle and work extra hard to go to the top. Women as leaders are very different when compared to men but still the difference in the way they think, the way they act and their approach to work can be an advantage to them. So it is high time that organizations utilize the woman workforce that is so versatile, equally qualified, and efficient like a man. Action has to be taken before the Glass Ceiling turns to Metallic walls.



## WOMEN IN LEADERSHIP ROLES

Research evidence shows that presence of women in top leadership roles is accompanied by superior organizational performance. It is a sad commentary that we still find women in small numbers in senior and top positions. We need to examine the attitudinal and systematic barriers to women's advancement and be able to suggest some ways to overcome them. While women need to become more proactive, for any meaningful organizational change to occur, top management and HR professionals need to work together. Women need to be supported in their career development efforts. Through focus group discussions including men and women ideas can be generated about new organizational initiatives. Access of women to leadership development experiences and training programs should be enhanced and women's participation should be actively facilitated and encouraged. If the low participation rate of women managers in the Management Development Programs offered at IIMs is any indicator, HR professionals can do a lot by creating development budgets and leadership development opportunities for women managers. HR can encourage mentoring through formal and informal mechanisms. Women can be encouraged to create and join powerful networks. Initiatives can be undertaken to celebrate successful women in leadership roles, so they can become role models for other women.

While family support, education, investing in building mentors, and training, helping to build mentoring and peer group networks, strengthening systems and processes are essential, firms have to ensure that the talent pool they fish in is wider and deeper than it is today, so that the organization of tomorrow has the best of authentic and communal styles of leadership to tap into. Women employees

need to be told about the importance of building relationships, networking within and outside the organization, and the need to develop a personal leadership style. Companies need to recognize their successes and publicize them, so there are more and more role models available to young, ambitious women joining the workforce, willing and eager to fight their way to the heart of labyrinth.

Today organizations are willing to hire women and we can see a sea change in the earlier male-dominated corporate world. Education has helped provide equal opportunities for women. Retention policies in organizations have also changed. Women employees are getting equal benefits like their male counterparts. Women are also reaching the top management levels but again the numbers are few. Women have challenges throughout their career especially after marriage like parenting and other domestic responsibilities. It is time progressive companies take up positive initiatives to create gender diverse work environments and also provide facilitate to support women. After all, a woman who has a good support system from the organization where she works, her family, and her spouse can definitely be a good leader.

## GENDER FRIENDLY HR POLICIES

In order to ensure that more women transition to senior leadership positions, organizations need to have gender friendly HR practices, focus on competency development of women, have forums for women to express, etc. There is a need to increase the participation of women in the corporate workforce in India. Currently, the participation is a little above 6% of the total workforce. There are many reasons that explain the low numbers of women in key leadership positions: some of them being lack of role models, lack of

management experience, commitment to family, etc.

Unfair treatment including salary differentials between men and women of comparable profiles need to be examined and corrected. Though this is only a suggestive list of ideas for promoting the advancement of talented and deserving women to leadership roles, it can be expanded by enthusiastic and dedicated HR professionals. The most important task is enlisting the support of the top management. If unleashing the untapped leadership potential of talented women and harnessing it for organizational good becomes their shared agenda, a supportive top management and committed HR can do wonders together. Organizations have a big role to play in the area of stereotyping of women's leadership styles. They have to build effective processes and systems. HR professionals and leaders in the company can be change agents by understanding if and how the informal aspects of the company culture and environment discourage women from seeking and achieving leadership positions. An effort to keep the following practices in place would be very much ideal.

Building a partnership of HR and line managers to sensitize managers, both men and women, through training and communication programs that deal with subjects of diversity and gender.

Ensuring the systems and processes of the company are robust and can detect inappropriate behaviors

Helping to build a women's network to encourage mentoring

Celebrating women achievers at all levels.

Technology can play a major role in providing a more conducive environment for women. With the growth of telecommunications and connectivity, working from home or having flexible working hours is a real possibility. These can provide women with an opportunity to contribute while not feeling pressured about the situation at home. Introducing some of these initiatives would definitely result in retention, high motivation, and improved productivity besides a much larger employee base than just women. Child-care facilities, counseling, mentoring, specialized training interventions, flexible work practices can be used by both men and women employees in equal measure thereby doubling business benefits.

### **THE JOURNEY AHEAD FOR WOMEN MANAGERS**

A time has come for women to introspect their hidden strengths. Of course, the journey of women is a sojourn steeped with pitfalls of biased tendencies and discouraging attitudes, certainly not an easy journey, but for the inner strength, grit, and determination, women can walk to the finish line with her head held high. The power of the fairer mind has crossed boundaries and chartered a path of unprecedented growth paving opportunities galore. For women, discovering self-potential is a continuous process of evaluation of their own capabilities, analyzing their reactions under varying circumstances, understanding the effect and changes they thus bring about in their environment, and assessing the cumulative impact it has on their future prospects of growth.

When a woman is operating at her most authentic self, she simultaneously feels and is viewed as being a more effective leader. A successful woman leader also has a complex set of systems

support created by both her and the organization-her interpersonal resources. Successful executive women authentically lead big and bold changes, pushing the envelope of institutional norms with power and credibility. They not only shape the culture, but broaden the strength and capability of the organization itself by creating a diversity of leadership. Many women tend to experience robust careers as their personal lives and external commitments become more robust. Often these forces play off each other in a positive and fruitful way. Stakeholder engagement by creating a win-win proposition where each stakeholder can see a mutuality of interest is emerging as a distinctive feature of „living organizations“.

Studies all over world say that women are dramatically underrepresented in formal leadership positions across organizations. The women in the new millennium still need to establish their positions in the corporate world. Their strengths have often been undervalued and less rewarded especially when compared to their male counterparts. Some of the barriers that are preventing them from making it to the top positions in corporations as they aspire to reinvent themselves in leadership positions include being „stereotyped“, being confronted by the „glass ceiling“ and measuring women’s leadership effectiveness on traditional masculine measures. It also has been seen that women tend to put profession as second-in-line to their personal lives when it comes to commitment. In such a scenario, it is family challenges that act as an impediment as opposed to barriers within the organization or those set up by top management. The concluding argument is that today’s generation is not complaining about discrimination and unfair treatment. Policies on diversity, affirmative action, inclusion have created

frameworks where the overt rules of engagement have to be rewritten.

### CONCLUDING COMMENTS

Despite a 55-year history of women in the corporate world, there are still only a very few women that occupy those coveted top roles. It is because industry is still un-accepting of women leaders and not because women do not have the capability for the top jobs. We need to explore the obstacles that women managers face and attempt to set out recommendations for the individual, the organization, and industry bodies, to help widen and deepen the pool of talent available to companies and Boards. Of course, some of the obstructions that women face include (i) lack of significant line experience, (ii) stereotyping of women’s abilities, aspirations, and leadership styles, and (iii) lack of mentoring and/or role models. Some of these reasons are so closely inter-related that the hitherto used metaphor of a glass-ceiling be replaced by that of a labyrinth. Successfully negotiating a labyrinth requires perseverance, an awareness of progress made and opportunities lost, and a careful analysis of the twists and turns that are yet to appear.

Are women leaders in the East very different from those in the West? Women from both these worlds have had opportunities to interact with women in different parts of the globe and also work in geographies that are not native to them. In such cross border scenarios how successful women have been in adapting to different cultures and their about their work ethics are some of the questions that we need to address and seek meaning answers. In order to be successful as a leader, women executives have to be „knowledge-driven“ and they should lead from the front. Organizations cannot compete in a global environment without

using women power. Reporting to a lady is not being seen as the “ultimate insult” any longer. Organizations are looking more for empathy, understanding, and communication skills, attributes that are more feminine in nature. However, looking around the positive environment that is emerging all around business houses makes one confident that we shall soon see a new Corporate India brimming with the confidence of greater balance and perspectives in its leadership.

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# Empowering Rural Women through Entrepreneurship in India

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## ABSTRACT

India's commitment to the objective of economic growth with social justice can be fulfilled only if rural women are brought into the mainstream of economic activity not as beneficiaries of the socio-economic growth but as social change agents and social reformers. Policies and programmes have to be evolved so that development of rural women takes place in a planned manner. However, the gender inequality is blocking the rapid development of the society. The approach to rural women's development is through empowerment with total involvement of groups concerned. One of the significant achievements in recent years in Rural India in this direction is the development of an entrepreneurship process among rural women. This is a process of developing women in leadership positions where they can achieve economic independence and social transformation.

In a developing country like India, where almost half the population comprises of women, development of women is of utmost importance for the upliftment of economy as a whole. In comparison to the developed nations, developing ones lag behind in this sector due to several noticeable reasons. In this Paper, our main focus shall be on rural women who increasingly, face greater livelihood insecurity on account of market forces and liberalization policies, and greater restrictions on access to resources such as land, water, forests and village commons. In this Paper, an attempt is made to analyse the kind of change these women can create in their lives and its social impact while opting for entrepreneurship at a small scale. Also we shall throw some light on the various issues that act as obstacles in the path of women development and the way they need to be addressed.

## INTRODUCTION

Empowerment of women is an issue which is being discussed and debated globally. This term started being popular since 1980 in the field of development. In India this cause was identified and included in the sixth five year plan (1980-81). It is here that the development of women was introduced for the first time. India's rapid development is intrinsically linked to the social, economic and political empowerment of every citizen of this country. Ensuring gender equality by removing gender discriminations is the key to real empowerment. The year 2001 was declared as the year of women empowerment, for enhancing the status of women. The prime

minister made an appeal to all citizens of this country for their active participation for promoting women's access to quality education, health care, employment and social security. Women entrepreneurship is the latest upcoming phenomenon in India for the development of women specially residing in rural areas. Micro enterprises for the sustenance and development are a favourable option for these rural women. This may provide a self reliant means of livelihood to them as well as other women who wish to contribute their services. However, the emerging perspectives from the research and consultancy works undertaken earlier should help all concerned to design and implement

appropriate activities to facilitate development of leadership through entrepreneurship among women.

Though the concept of entrepreneur and entrepreneurship are rooted in the sphere of economic activity but the entrepreneurial process goes beyond economics with significant influence to the social system. The essence of the concept requires the existence of economic opportunity, sympathetic cultural forces, supportive governmental action, and strong personal values and traits. So far gender-specific entrepreneurship models have not received adequate attention. The definitions, conceptual frames, and theories are generally regarded as neutral and assumed to be applicable to both men and women. In practice, however, there appear to be some differences in the circumstances under which the woman displays entrepreneurial behaviour. On surface, the problems of conceiving, nurturing, and nourishing an enterprise may be the same for the man as well as the woman entrepreneur. However, what is generally overlooked is the magnitude of problems faced by the rural woman in getting an enterprise going due to social and cultural factors, and the gender discrimination that prevails in society at the level of family, school, employment, and such other important settings, inhibiting her overall development and growth.

### **Shifting Paradigms**

It is increasingly becoming evident that the approaches, programs, and strategies that are applicable to promote entrepreneurship among the more advantaged women are not likely to be applicable to less advantaged rural women. In a country like India, access to education, information, and employment are available to the women mostly in the urban areas.

The resulting "progress" in the status of urban women is very noticeable. Highly

qualified women have made a mark in practically every field. They have broken their traditional boundaries, competing with their male counterparts at every stage of their career. We can discern a gradual shift in their roles from homemakers to earning members, from powerlessness to states of empowerment in several spheres. However, the picture is different for poor rural women in states of struggle, working for survival, if one were to trace the history and outline the observable paradigm shift over the last 35 years from „Exclusion of Women“ to „Inclusion of Women“.

### **Objectives of the Present Article**

Find out basics about micro enterprises/small scale entrepreneurship

Analyse factual status of the rural women in India, their sources of income, and other activities.

Point out various hurdles faced by rural women in taking up these small scale employment opportunities

Suggest ways by which these rural women can be benefited from micro entrepreneurship and assistance offered by various organisations

### **Micro Enterprises**

A trend in India has been in the emergence of the small scale sector of industry, in response to a complex mix of factors in the process of globalization. One important consequence has been the focus on women entrepreneurship, as stressed by various international agencies, the respective governments, and many NGOs.

It is a type of small business, often registered, having five or less employees requiring a seed capital of less than \$35000.

In developing countries, microenterprises comprise the vast majority of the small business sector—a result of the relative lack

of formal sector jobs available for the poor.

These micro entrepreneurs operate microenterprises not by choice, but out of necessity. Paper to Pearls is an example of a micro-enterprise, one that is based in the US and works with women in northern Uganda.

Micro-loans are a way for organizations and entrepreneurs to make small loans to those in poverty often in third world countries. The term "micro-loans" is more commonly referred to as micro credits.

A nationwide survey conducted in 1992 revealed that 330,000 micro and small enterprises created employment for 26 percent of the economically active population. Furthermore, a significant portion of this is represented by women (38 percent). It is argued that the households of women are benefitted more by microenterprises because women tend to devote this income, proportionately, more to their households than do men. Therefore, it is recommended that microenterprise training programs should be made less gender-neutral and should be diversified to address the central challenges of women's businesses. The issue is not just confined to starting a business set up, as one takes up a small scale business the process of diagnosing it timely is a crucial part to sustain the business.

The four stage approach is well known in this context (Bertrand bellon and graham Whittington) the structure of the business, principal strategic objectives, the business environment and the financial results. The internal state of health of the business also needs constant diagnosis. A sample research conducted in the district karnool (Andhra Pradesh) to find out a rough estimate regarding the percentage of

people who are willing to take entrepreneurship independently gave us the following results.

### **RURAL WOMEN IN INDIA**

Rural women still remain a disadvantaged segment of Indian society. Statistics show that whereas 86.1 per cent females are engaged in agriculture, the figure of males is 74per cent. But there are hardly any special programmes for enhancing women"s agricultural skills. While 7.1 per cent rural females are engaged in manufacturing, the percentage for rural males is 7 i.e. less than that of females.

But most of the training programmes have hardly any female participation. While rural males have opportunities in construction, trade, transport, storage, and services, these are mostly denied to rural females. Obviously, opportunities must be created to enable them to acquire the skills necessary for entering these newly emerging occupations. The main sources of income of rural women are agriculture, horticulture, fisheries, forest produce, labour agriculture, livestock etc. A sample survey conducted in the district karnool of Andhra Pradesh to find out the percentage of men and women already engaged in some sort of small scale entrepreneurship gives us the following result.-

Here we can clearly analyse that the percentage of women entrepreneurs are much less than their male counterparts. Although in the previous graph the percentage of women who desire to take up entrepreneurship was much higher.

### **Reasons for Backwardness of Rural Women**

#### **Socio-economic causes:**

- Lack of access to resources
- Lack of finance
- Illiteracy / lack of education
- Poverty

Unemployment  
Deplorable health level

### **Cultural and traditional causes:**

Male dominant culture  
Conventional culture/thought process  
Customs of marriage as the utmost priority  
Fear of taking risk in a new venture  
Fulltime family responsibility.  
Lack of awareness  
Low motivation/will power.

As a result of the cultural and economic factors, women face discrimination right from childhood. The social backwardness of Indian women points to the great hiatus between their legal status which is more or less equal to that of men, and their actual position in society, which is still far from the ideal which exists on paper. The educational, economic, political and social backwardness of women makes them the largest group hindering the process of rapid social change.

### **Small Scale Entrepreneurship and Rural Women**

By opting for entrepreneurship at a small scale shall help the rural women in the following aspects:

Independent setup and sustainable livelihood  
A status of equality with earning men  
A rebuilt reputation and social stature  
Equal contribution at home, i.e. , doubling the household income  
Employment for many such women under a single programme  
Instant financial aid from governmental and non -governmental organisations  
Constant source of income  
Mostly can be handled from home itself, so convenient to manage both household jobs and work  
Guiding future generations to be self reliant

The women who use their talents to live fulfilling lives can be called as empowered women. Such women can maintain a balance when they are under the pressure of family, religion and work. They can also contribute towards empowerment of all women. Such women maintain equal mindedness and never consider men as inferior or superior to them. They are very cooperative and helpful in achieving common goal.

### **Steps taken for Women Empowerment by Government of India**

Government, non-Government, promotional and regulatory agencies to come forward and play the supportive role in promoting the women entrepreneur in India .The Government of India has also formulated various training and development cum employment generations programs for the women to start their ventures. Government of India has specifically promoted women entrepreneurship in 7<sup>th</sup>, 8<sup>th</sup>, 9<sup>th</sup> five year plan. Few of noticeable features are:

Arranging training facilities  
Identifying specific target groups  
Developing new equipments  
Marketing facilities  
Decision making processes

### **Other Initiatives for Empowerment of Rural Women**

Prime Minister Rojgar Yojana and EDPs were introduced to develop entrepreneurial qualities among rural women.

Women co-operatives schemes were formed to help women in agro-based industries like dairy farming, poultry, animal husbandry, horticulture etc. with full financial support from the Government.



Several other schemes like integrated Rural Development Programs (IRDP), Training of Rural youth for Self employment (TRYSEM) etc. were started to alleviate poverty. 30-40% reservation is provided to women under these schemes.

Trade Related Entrepreneurship Assistance and Development (TREAD) scheme was launched by Ministry of Small Industries to develop women entrepreneurs in rural, semi-urban and urban areas by developing entrepreneurial qualities.

Mahila udyam nidhi and mahila vikas nidhi

Micro credit schemes for women and rashtrya mahila kosh are a few to name.

Entrepreneurship development programmes (EDP) and small the small industries development organisation (SIDO) are the means through which special training support is being provided to the women entrepreneurs.

Consortium of Women entrepreneurs of India provides a platform to assist the women entrepreneurs to develop new, creative and innovative techniques of production, finance and marketing.

There are different bodies such as NGOs, voluntary organizations, Self-help groups, institutions and individual enterprises from rural and urban areas which collectively help the women entrepreneurs in their activities. These organisations major task is to make these women aware of the various provisions they are actually entitled to and thus motivate them to take up entrepreneurship as a career or as a need moreover.

Within the realm of entrepreneurship, it appears relatively easier for women in the more advantaged segments of the population to set up and sustain enterprises of their own. The real challenge in India appears to be in bringing

the vast majority of the disadvantaged rural women into the mainstream of economic activity. A country like India needs to have a societal vision that is characterised by a just and equitable developmental process, steadily overcoming the problem of inequality. One of this is to make the rural women as significant contributors to the economy through their own micro enterprises. One of the innovations to help the rural poor women has been the formation of micro level savings and credit self-help groups.

Women in interior and remote parts of India are encouraged by both NGOs and formal financial institutions to organize themselves into small solidarity groups that enable them to overcome the many hurdles usually faced while dealing with large formal credit agencies. Several commercial banks are now engaged in the promotion of SHGs in partnership with NGOs. Access to institutional credit for rural/poor women has helped them in two important ways: (i) acquisition of assets and access to technology, leading to productivity enhancement and higher profit, (ii) easy and timely availability of institutional credit has helped them to escape from the clutches of exploitative moneylenders. SHGs have acquired policy significance in India following the success of *Grameen Bank* of Bangladesh in adopting a group based approach to its credit and savings programmes. Self Employed Women's Association (SEWA) in India has also shown the merit in the approach of getting large numbers of self-employed women together to fight for their rights.

### Concluding Comments

Women are increasingly striving and learning to balance between happy experiences of autonomy in their business sphere and responsibility towards family. The subject of entrepreneurship among rural women can be examined meaningfully

only by contextualizing it appropriately. In a developing country like India, the contribution of women to the economy and to the larger developmental process in society acquires a very special significance. The experience in India suggests that entrepreneurship avenues for women have a great potential for both the objectives as mentioned above. For these objectives to be accomplished it appears important to plan and implement interventions at multiple system levels simultaneously, rather than to rely heavily on the training of entrepreneurs alone.

To improve the status of these rural women, the combined effort of both governmental and non governmental agencies is imperative. Currently the government has various schemes to develop entrepreneurship in rural areas, various non-governmental organisations also has several guidance schemes and facilities to address any issues and grievances related to rural women. Now it becomes decisive on part of rural women to avail this opportunity and ameliorate their present and future. The empowerment of women makes them self confident and self reliant. To empower women is to strengthen their control over the decisions that affect their lives, both within and outside the household. Women should be encouraged to bring in, their vision, leadership, knowledge and skills, views and aspirations into the development agenda from the grass roots to the assisted in conflict situations and their participation in peace process supported. Different kinds of academic plans should be formulated in order to empower women so that they have more control over their lives and play an effective role in eliminating gender bias and discrimination in the society. In brief it can be said that women must be empowered in order to have a safe environment, economic and social justice, adequate reallocation of resources. Women empowerment is no

gratis, but a right denied so long... and the fight will continue to achieve it!

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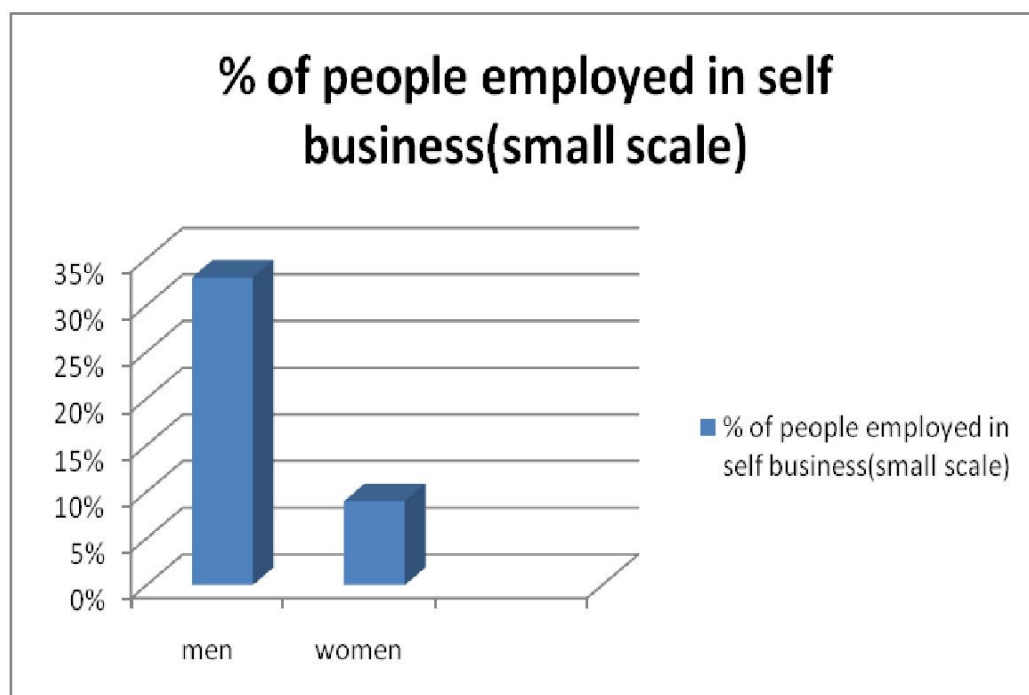
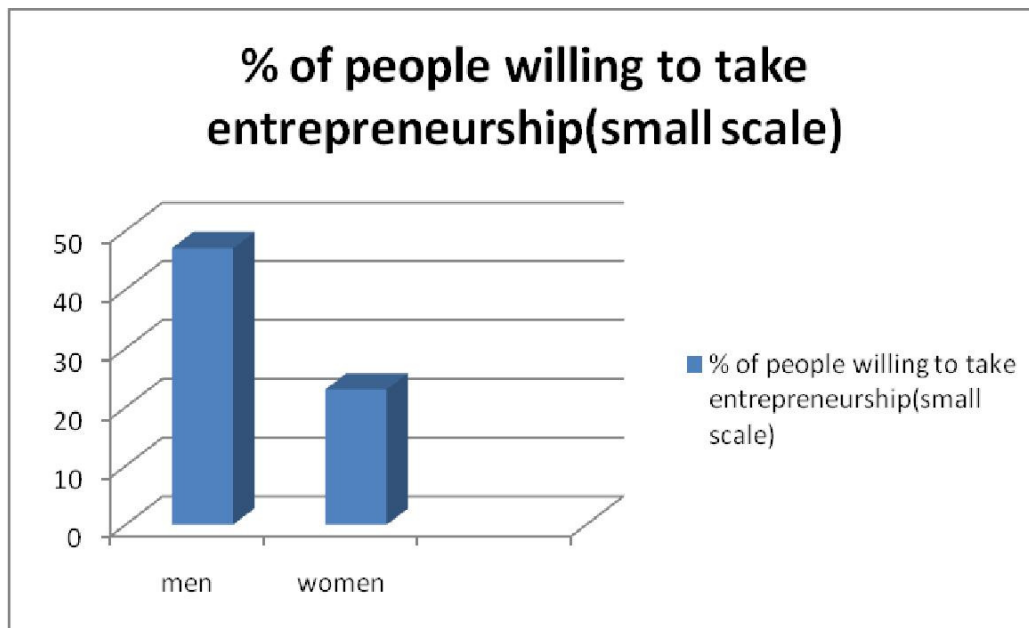
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# **Job Satisfaction among Indian Lecturers: A survey Conducted in Ibri College of Technology, Ibri, Sultanate of Oman**

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## **ABSTRACT**

**Great, I am hired by Sultanate of Oman as Lecturer for an Engineering college, with a good remuneration. I made an effort to conduct a small survey to know about the feelings of Indian Lecturer about visualization of Oman. In this survey we are finding the mutual opinion of individuals regarding their staff, students, subject, salary, amenities, motivation factor, future growth, personal growth etc., A Random sampling is conducted in IBRI COLLEGE OF TECHNOLOGY around 70 Indian Lecturers are the respondents for this survey. IBRI is a place in SULTANATE OF OMAN which is of 400 kms far from MUSCAT. The main motive of this survey is to highlight the methodologies of Indian Lecturers in Sultanate of Oman.**

**Key words: Staff, Students, Subject, Salary,**

## **INTRODUCTION**

Sultanate of Oman is one of the most developed country because of its topographical presence, it is sacred with so many natural resources which in turn attracts many business people, professionals like lecturers, doctors, engineers and etc., setup businesses and work in this country by enjoying ample of benefits for both the parties. The trade policy, civil rules, services and getting visa is easy in Oman, which attracted many traders, investors and professionals from in and around Oman. These people can put their effort and ample time for the further development of economy. Income is tax free and expatriates can transfer money to their home country as much as they wish and are not restricted. These factors attract

expatriates especially lecturers and encourage them to work in Sultanate of Oman.

Ibri is one of the oldest wilayat in the Sultanate of Oman. It was once a center for trade, art, religion, education and culture and surrounded by many mountains. Ibri is known as the agricultural village and is graded as Wilayat and has six main areas which are Ibri city, Souk, Sulaif, Murtafa, Hawas & Al Araqui. New official buildings and houses are coming up in the wilayat which shows the mark of development in and out of Ibri. Ibri being the growing city has a population of around one lakh approx., Ibri economy is based on agricultural products and nearly 20% of oil and gas exports of Oman have been extracted from in and around Ibri.

Ibri College of Technology is the youngest among the seven Regional Colleges of Technology under the Ministry of Manpower alongside with Al-Musanna College of Technology, Nizwa College of Technology, Ibra College of Technology, Salalah College of Technology, Shinas College of Technology and Higher College of Technology. The current strength of IbriCT is around 2,457 ([www.ibriict.edu.om](http://www.ibriict.edu.om)) students studying various programs.

The Ibri college of Technology started in 2007 with first intake of 347 students in the foundation program. The college is approved and monitored by Ministry of Man Power (MOM).

The College comprises four Academic departments; English Language Center, Engineering, Information Technology and Business Studies. The Programs offered in the college are Foundation and Post Foundation. The Foundation (Basic) Program comprises of four different levels they are pre-elementary, elementary, intermediate and advanced level. After completion of their Foundation (Basic), they can proceed to the next level Post Foundation. In Post Foundation, they have to complete two stages i.e., First year Diploma & Second Year Diploma according to the chosen branches (Business Studies, Information Technology, and Engineering). In Second year Diploma only they can select specializations in their respective branches. Then they can continue with their specialized subjects in third year (Higher Diploma). Each level offers a fulfilling experience for all students that would guarantee them enough skills to enable them to compete in the job market. The college started with an initial intake of 347 students and set a landmark for quality education for more than 1500 students. IbriCT also extended its facilities including a new building with conducive environment with good infrastructure for the Engineering

Department with a rough estimation of 7,500 square meters lot area. The college consist a total of 159 staff members from various Academic departments ([www.ibriict.edu.om](http://www.ibriict.edu.om)).

Ministry of Manpower is taking care of college recruitment, whereas the teaching staff recruitment process in the college is undertaken by the MoM in consultation with recruitment agencies. Once the recruitment process completes, selected lecturers are posted to various colleges as per the specialization based on college projection plans.

## **PURPOSE OF THE STUDY**

To know the level of Job satisfaction among the Peer Groups

To know the results of positive or negative job satisfaction, we identified four key areas.

## **SAMPLING FRAMEWORK**

### **Sample Size**

The study confined to Indian lecturer working in Ibri College of technology as the ratio of the Indian lecturers comparatively more than other nationalities and we have selected sample size of 70 Indian Lecturers.

### **Process of Data Collection Method**

The researcher sought permission and endorsement from the college authorities. After getting the approval, the researcher sent questionnaire to the concern department heads, later the researcher visited to the concern department to collect the filled questionnaires. Collected data is analyzed using average method.

## **SCOPE AND LIMITATION OF THE STUDY**

The study is primarily concerned about job satisfaction level of Indian lecturers in terms of four key areas: Work culture, Pedagogy, Career Growth and overall development Respondents.

The study is confined to Ibri College of technology irrespective to other college of technologies in sultanate of oman.

We have used average method for analysis which has its own limitation.

We have used random sampling method and all the respondents are full time Indian lecturers (70) with at least five years teaching experience.

## REVIEW OF LITERATURE

According to Graham (1982, p. 68) Job satisfaction as "the measurement of one's total feelings and attitudes towards one's job". Teaching is the best profession and the teacher is a prominent personality in the world. Teachers are a knowledge ambassador and arguably the most important group of professionals for nurturing the young minds. According to Panda and Mohanty, (2003) the teacher is the pivot of any education system. In fact, teachers are the strength of a nation and it is universally accepted that teachers' instructional performance plays a vital role in students' learning and academic achievement. There are many factors which motivates the teachers' job satisfaction level such as positive attitude & approach, teaching methodology, class room environment, colleagues support and professional relations with students.

Teacher job satisfaction and dissatisfaction are influenced by a number of factors .According Dinham and Scott (1998) that the sources of job satisfaction and dissatisfaction may be classified into three domains: (a) intrinsic rewards of teaching, (b) factors extrinsic to the college, and (c) college-based factors.

The intrinsic rewards of teaching concern the actual work load of teaching, advising the students, and periodic follow-up of students regarding learning and development, which are primary objectives and satisfaction for becoming a teacher(Scott, Stone, & Dinham, 2001).

Factors extrinsic to the college include college conducive environment, assessment methods and external evaluation and negative interpretation of teachers.

College-based factors include relations with colleagues, parents, and the college leadership, as well as time pressure, disruptive student behavior, and the values emphasized at the college.

## METHODOLOGY

Ibri College of Technology is bestowed by 159 lecturers in various academic departments. Out of which, 60 in English Language Center (ELC), 30 in Engineering (Engg), 39 in Information Technology (IT) and 30 in Business Studies Departments (BUS)

A five point scale questionnaire is prepared for random survey and responses were collected from 70 Indian Lecturers in various departments i.e., 12 (17%) from ELC, 20 (28%) from Engg, 18 (26%) from IT and 20 (29%) from BUS.

Out of 159 staff members, 90 (57%) of Academic staff members are Indians. As an Indian lecturer, **we feel Proud to be an INDIAN**. The table below shows that the number of lecturers in IbriCT according to their nationality and departments.

The below table and chart shows that out of 159, 90 are Indians which contributes to 57%, followed by Pakistanis 14%, Omanis 12% and 17% from different nationalities, which shows more number of Indians Lecturers are contributing their skills for overall educational development in the Sultanate of Oman.

Responses from the survey were statistically analyzed to measure the perception of lecturers regarding the Work Culture, Pedagogy, Career Growth and Overall Development through the Questionnaire.

The questionnaire consists of 19 questions. Responses collected from 70 respondents of various departments which come around 1330 questions. Out of which, 340 (26%) were strongly agree, followed by 674 (51%) were agree, 254 (19%) were neutral, 58 (4%) were disagree and 4 were strongly disagree.

Based on the above data nearly 77% of respondent are comfortable with the facilities provide by the college such as orientation, positive recognition, regular opportunities, values, conducive environment, college culture and harmonious place.

The above chart reveals that Lecturer in IbrICT, 4.33 are proud to be a part of the college system, which is the above the average 3.90, whereas rewards & incentives, contribution to reputed journals and curriculum development is 3.73 respectively which shows that there is a need for improvement as it is below the average of 3.90.

### KEY AREAS OF STUDY

The questionnaire is broadly classified into four key areas such as work culture, pedagogy, career growth and overall development. In which, the work culture refers to question number S6,S9,S11.S14,S15,S16,S17, Pedagogy S7,S12,S13,Career growth S1,S2,S3,S4 and Overall Development S5,S8,S10,S18,S19 respectively. Let us study in a nutshell about these areas separately in detail.

The above table and charts shows that 50% of the respondents agree, 27% respondents strongly agree, whereas 19% Neutral, and 4% Disagree, which shows that almost 77% of the respondent of IbrICT are satisfied with the work environment, team work, and good relationship with others.

As far as pedagogy is concerned, 52% of the respondents agree, 15%

respondents Strongly agree, 25% Neutral, 7% Disagree, and 1% strongly disagree which shows that almost 33% of the respondent of IbrICT are not satisfied with the performance measures and curriculum development.

The above table and charts reveals that 49% of the respondents agree, 26% respondents strongly agree, 18% Neutral, 6% Disagree, and 1% strongly disagree which shows that almost 3/4<sup>th</sup> respondents of IbrICT are happy with the induction program, positive recognition, monetary benefits and personal growth.

The above table and charts reveals that 52% of the respondents agree, 29% respondents Strongly agree, 17% Neutral and 2% Disagree, which shows that maximum respondents (81%) of IbrICT are satisfied with overall development in the various fields.

The questionnaire is pooled into four different areas such as work culture, pedagogy, career growth, and overall development. Work culture (4.00), Career Growth (3.93) and Overall development (4.06) is more than average rating, which shows that most respondent are satisfied, as per pedagogy is concerned the average rating is 3.75 which is less than 3.90 which means the respondent are not satisfied, it needs further improvement.

### CONCLUSION

Lecturers job satisfaction and dissatisfaction are influenced by a number of factors, whereas, Overall job satisfaction depends on college environment, colleagues support, research and development, teaching methodology, positive attitude and professional relationship. Finally we conclude based on the survey the three major areas such as Work culture, Career Growth and Overall development shows a positive result on the induction programs, orientation, positive recognition, opportunities for personal and

career development, conducive environment and harmonious place to work. As far as pedagogy is concerned, there is a need for further improvement in the area of curriculum review, research & development and industrial linkage.

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**Table 1**

**Number of Lecturers according to Nationality and Departments**

Depts.	Omanis	Indian	Pakistanis	British	Filipinos	Jordanians	American	Egyptian	Ukrainian	Canadian	Ghanaian	French	Tunisian
Bus	3	23	4										
Engg	1	27	2										
IT	2	33	1		3								
Eng	13	7	16	5	3	3	3	3	2	2	1	1	1
<b>Total</b>	<b>19</b>	<b>90</b>	<b>23</b>	<b>5</b>	<b>6</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>2</b>	<b>2</b>	<b>1</b>	<b>1</b>	<b>1</b>
<b>Grand Total</b>	<b>159</b>												

**Table 2**

**Five Point Scale Questionnaire**

Sl. No.	Particulars	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Average Rating
S1	Lectures are properly orientated and trained immediately upon joining this college	26	60	3	11	0	4
S2	Lecturers are given positive recognition when they produce high quality work.	23	54	17	6	0	3.94
S3	The College offers a good benefits & packages	26	40	29	3	3	3.85
S4	The College does provide regular opportunities for personal and career development	29	43	23	6	0	3.94
S5	The College system in place for reward	34	17	40	9	0	3.73



	and incentives, is transparent						
S6	The College has the same values as I have with regard to concern for others	34	49	14	3	0	4.12
S7	The College asks for my opinions and views when determining my department performance measures	14	63	11	9	3	3.76
S8	The College practices are consistent for making positive contribution for overall development	23	66	11	0	0	4.12
S9	I feel that my personal values are a good fit with this College culture	31	51	17	0	0	4.12
S10	The College fosters and facilitates for professional development	14	60	23	3	0	3.85
S11	The Lecturers are motivated by the college management to contribute articles to the reputed journals	23	40	26	11	0	3.73
S12	The College course contents reflect recent developments in the industry and in the job market	14	46	40	0	0	3.76
S13	The curriculum is periodically revised to keep pace with latest developments	17	49	23	11	0	3.73
S14	The College values the individual excellence over team work	17	46	29	9	0	3.73
S15	I plan to work at my present job in the near future	29	51	20	0	0	4.06
S16	The College physical working conditions are very pleasant	23	60	14	3	0	4.03
S17	The college provides conducive environment for good relationship among employees	34	54	11	0	0	4.21
S18	I am proud to tell others that I am part of this college	37	60	3	0	0	4.33
S19	Overall, college is a harmonious place to work in	37	54	9	0	0	4.27

Table 3

## Work Culture

Strongly Agree	27
Agree	50
Neutral	19
Disagree	4
Strongly Disagree	0

**Table 4**  
**Pedagogy**

Strongly Agree	<b>15</b>
Agree	<b>52</b>
Neutral	<b>25</b>
Disagree	<b>7</b>
Strongly Disagree	<b>1</b>

Table 5  
Career Growth

Strongly Agree	<b>26</b>
Agree	<b>49</b>
Neutral	<b>18</b>
Disagree	<b>6</b>
Strongly Disagree	<b>1</b>

**Table 6**  
**Overall Development**

Strongly Agree	<b>29</b>
Agree	<b>52</b>
Neutral	<b>17</b>
Disagree	<b>2</b>
Strongly Disagree	<b>0</b>

**Table 7**  
**Performance Rating Of Four Key Areas**

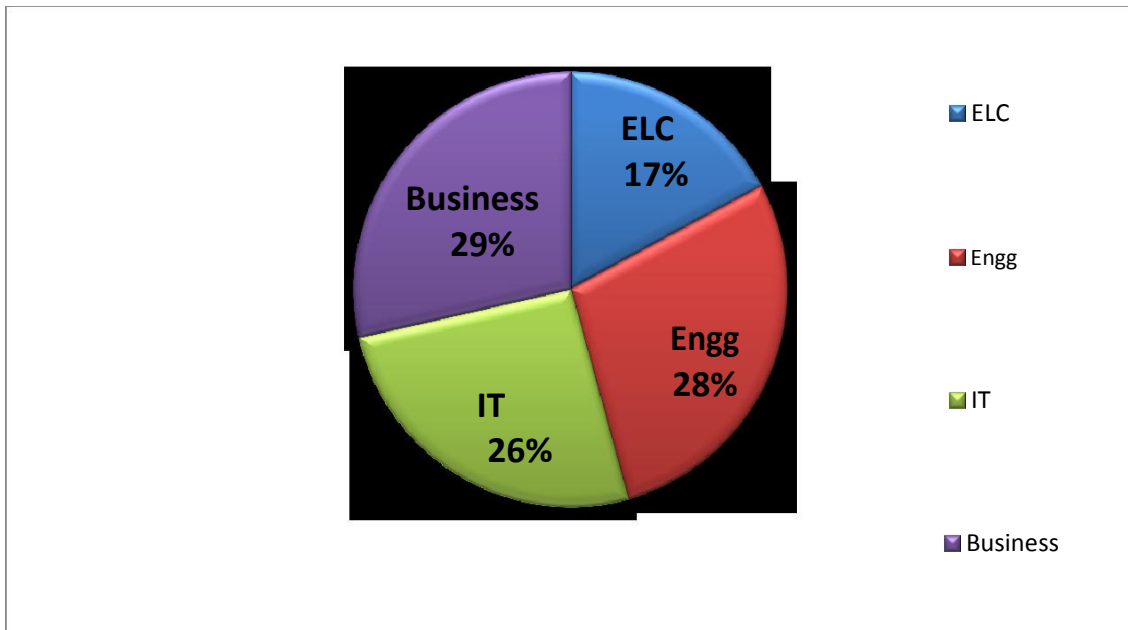
<b>Work Culture</b>	
S6	<b>4.12</b>
S9	<b>4.12</b>
S11	<b>3.73</b>
S14	<b>3.73</b>
S15	<b>4.06</b>
S16	<b>4.03</b>
S17	<b>4.21</b>
<b>AVG</b>	<b>4.00</b>

<b>Pedagogy</b>	
S7	<b>3.76</b>
S12	<b>3.76</b>
S13	<b>3.73</b>
<b>AVG</b>	<b>3.75</b>

<b>Career Growth</b>	
S1	<b>4.00</b>
S2	<b>3.94</b>
S3	<b>3.85</b>
S4	<b>3.94</b>
<b>AVG</b>	<b>3.93</b>

<b>Overall Development</b>	
S5	<b>3.73</b>
S8	<b>4.12</b>
S10	<b>3.85</b>
S18	<b>4.33</b>
S19	<b>4.27</b>
<b>AVG</b>	<b>4.06</b>

**Figure 1**  
**Number of Respondent**



**Figure 2**  
**Number of Lecturers in Percentages according to Nationality**

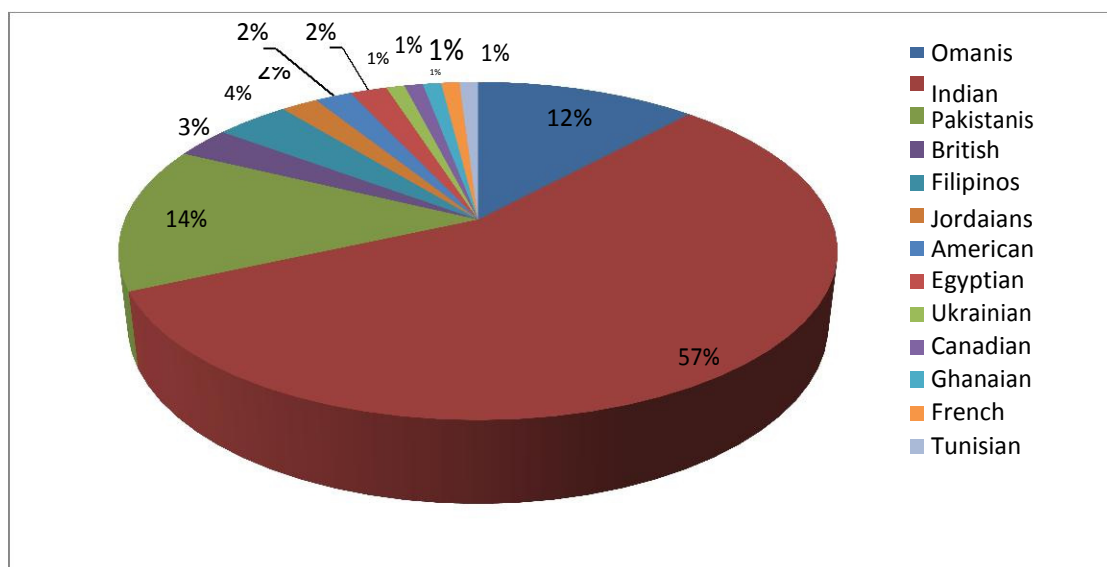


Figure 3

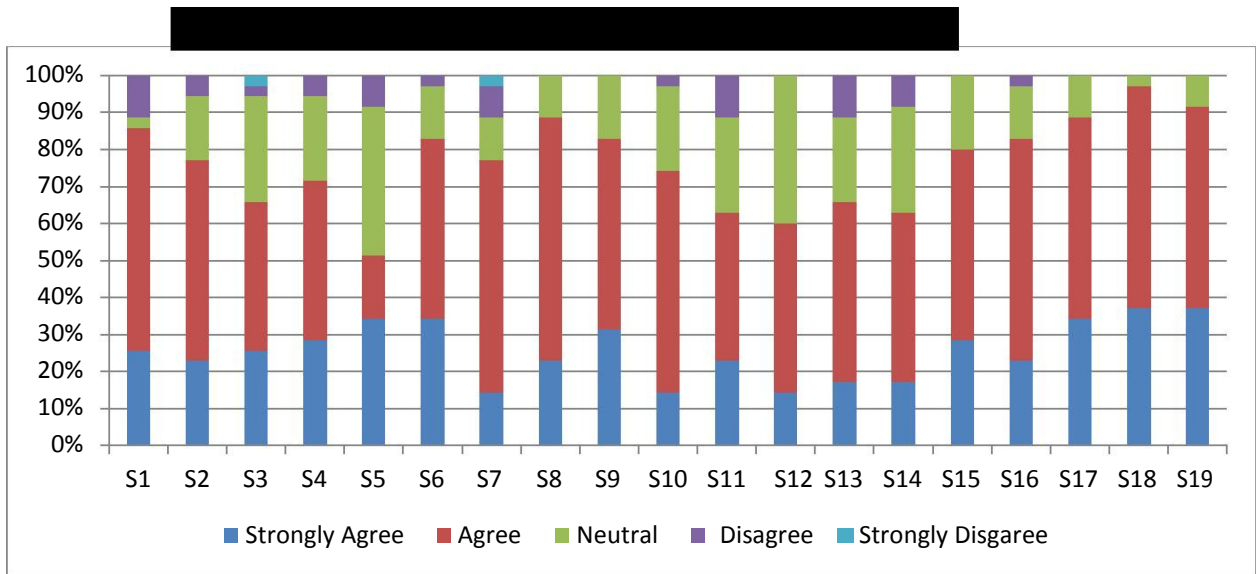


Figure 4

Total Responses from respondents

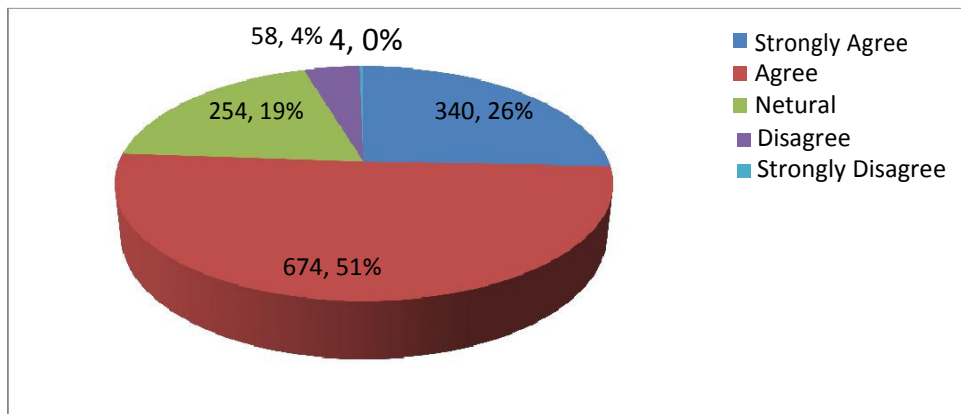
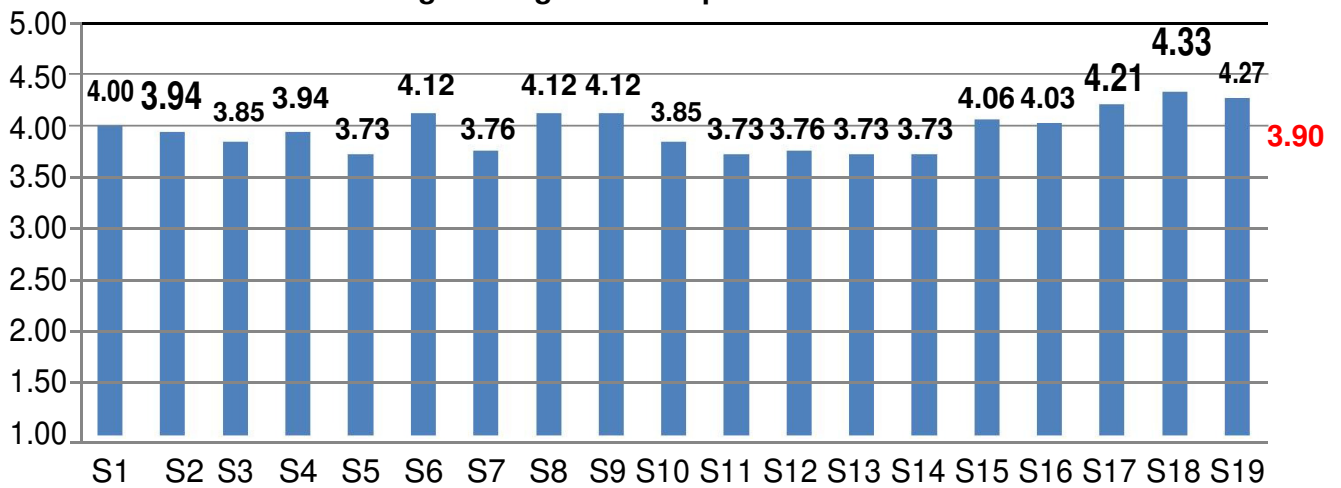
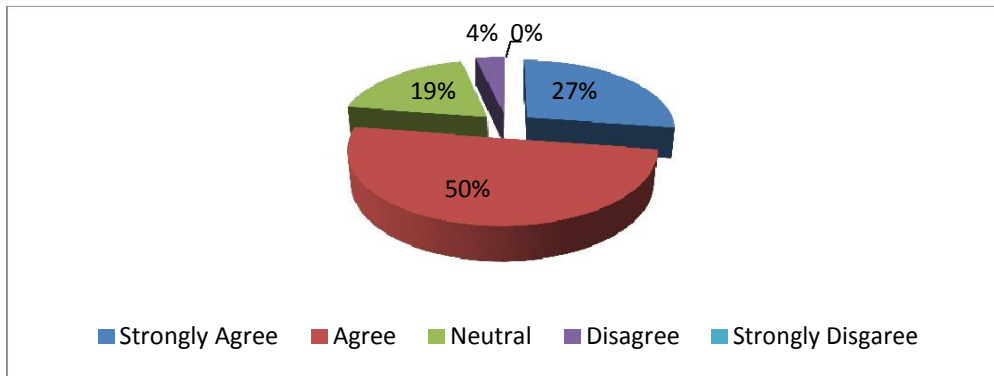


Figure 5

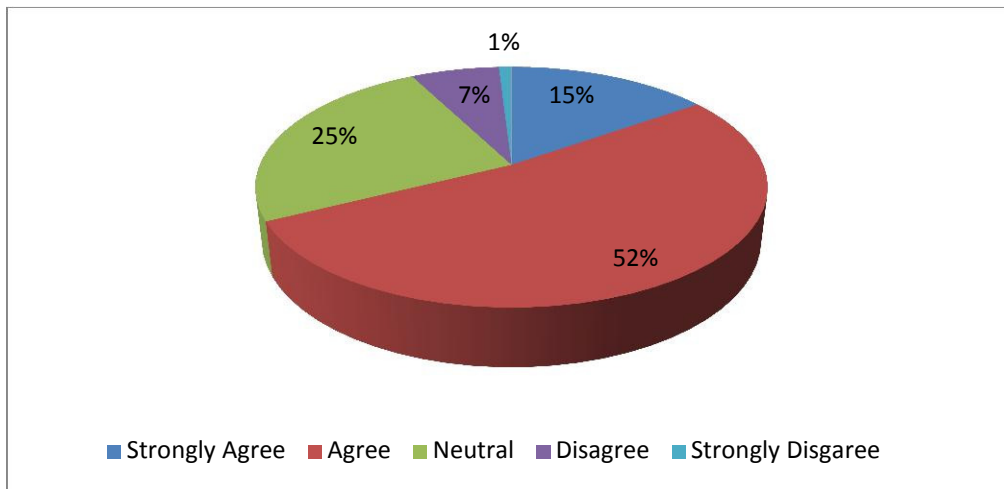
Average Rating of the Respondents



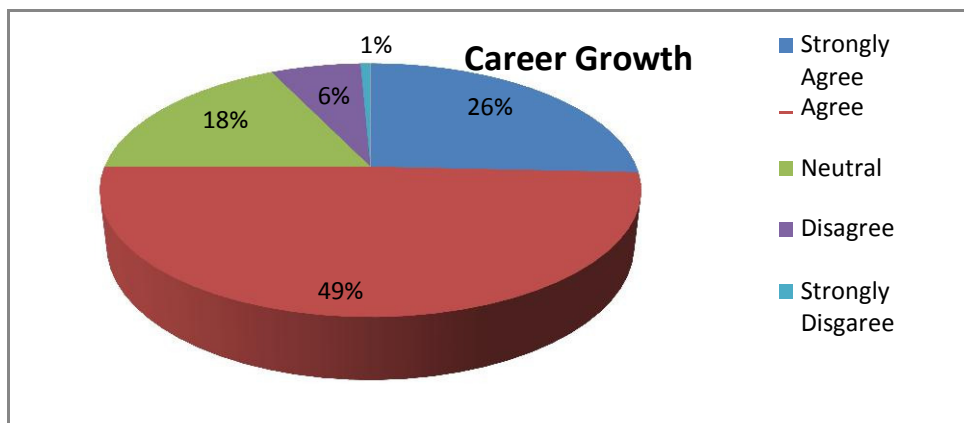
**Figure 6**  
**Work Culture**



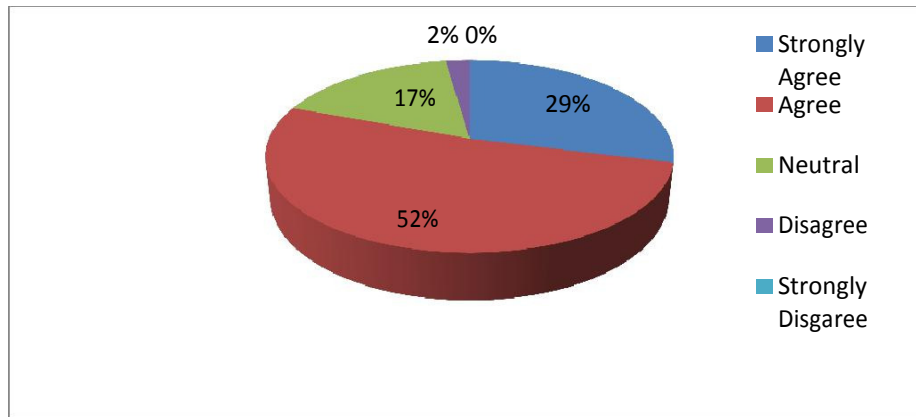
**Figure 7**  
**Pedagogy**



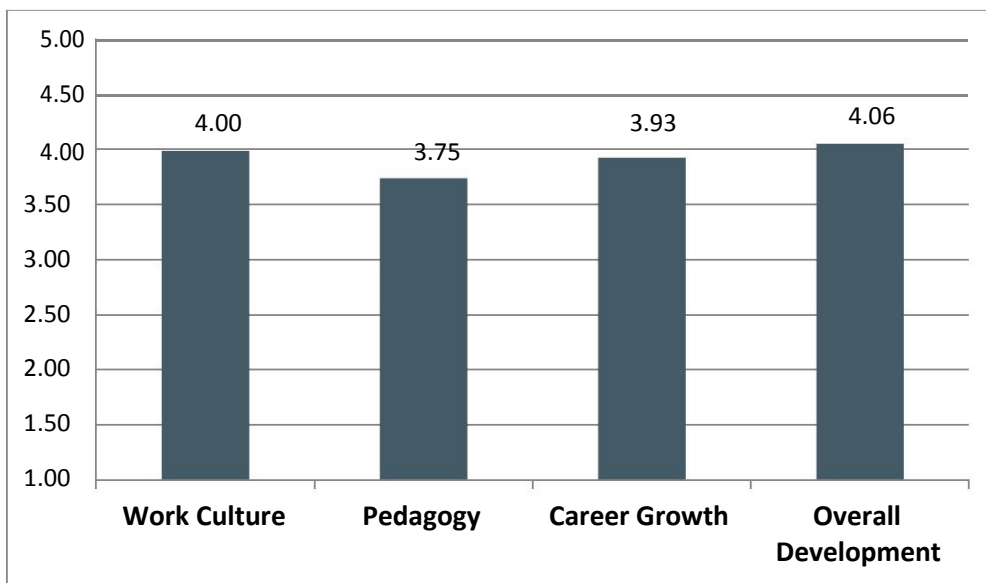
**Figure 8**  
**Career Growth**



**Figure 9**  
**Overall Development**



**Figure 10**  
**Performance Rating of Four Key Areas**



# Efficiency of Marketing Channels for Pomegranate in Koppal District of Karnataka

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## ABSTRACT

India is endowed with wide agro climatic conditions that offer immense scope for cultivation of various kinds of fruits crops. India stands second largest producer of fruits in the world and first in Pomegranate production with 36 per cent followed by 31 per cent by Iran. It is the most important fruit crop of the tropical and subtropical region. Lack of suitable marketing avenues and channels decreases the margin for the producers. This study was undertaken to know existing marketing channels and the problems associated with in the Koppal district of Karnataka. The study revealed three marketing channels preferred by the producers, of which the channel-II is the most prevalent. The marketing efficiency is more in channel – I when compared with other two channels and the price spread is also less in channel – I when compared to other two channels. The producers faced many constraints, of which, Method of Sale Lack of Processing Facilities, Skilled Labor Facilities, Absence of Market Information, Transportation Facility are the major one.

## INTRODUCTION

Karnataka occupies a prominent place in the Horticulture map of the country. The State is blessed with natural resources, favorable agro-climatic conditions and enterprising farming community, which offer scope for an all-round development of horticulture. Horticultural crops occupy an area of 35.37 lakh hectares with the annual production 613.26 lakh tones. The major horticultural crops that are grown in the State are Mango, Banana, Guava, Sapota, Grapes, Jack, Papaya, Citrus, Pineapple, Fig and Pomegranate.

Pomegranate (*Punica granatum*) is an ancient favorite table fruit of tropical and sub-tropical regions of the world. Pomegranate is currently ranked 18<sup>th</sup> in terms of fruit consumed annually in the world. It is predicted that as a result of its

health benefits, availability in convenient pre-packed aril form & the improvement form of cultivator's selection it will move to 10<sup>th</sup> place in the next 5 years. In Koppal district of Karnataka, where the study has been conducted pomegranate is being grown on commercial scale. The area under pomegranate in the district is 4844 ha i.e.32.97 per cent of total area under pomegranate in the state with a production of 58102 MT (39.44per cent)). Dry land horticulture is picking up fast in the district. The important horticulture crops grown in the district are pomegranate, Sapota, Ber and Papaya.

The study on "Efficiency of Marketing Channels for Pomegranate in Koppal District of Karnataka" great help to the pomegranate growers. Therefore, an attempt was made to understand the relative costs and benefits of different



channels has imperative to maximize farm performance.

In view of the problems involved in the logistics of pomegranates in Koppal district, the study has been undertaken with the following objectives;

#### **OBJECTIVES OF THE STUDY:**

To study the existing logistics setup in the marketing of pomegranates and to examine the efficiency of different marketing channels.

To assess the marketing cost, marketing margins and price spread.

To identify the constraints in marketing of pomegranates in the study area

#### **REVIEW OF LITERATURE**

**R.P. Singh and Anupama T. (2006)**, conducted study on economics of production and marketing of tomato in Kanke Block of Ranchi District of Jharkhand. It was found that there were three main channels in the marketing of tomato.

Channel I: Producer – Consumers

Channel II: Producer – Wholesaler - Consumers

Channel III: Producer – Wholesaler – Retailers – Consumers

It was observed that 40, 35, and 25 per cent of the farmers sold through channel-I, Channel-II and Channel – III respectively. The average marketing cost per quintal was Rs.41.00 among the cost packaging cost was the most important accounting for 39 per cent, 24 per cent is the transportation cost, 19 per cent is the labor cost, followed by 12 per cent expenses towards market charges. The producer's net share was 96 per cent, 55 per cent and 44.35 per cent among the three channels.

**Kailash Kumar and H.L. Singh (2010)**, conducted study on Price spread of mango in Lucknow district of U.P. Data collected from different marketing channels of mango marketing which were identified by observing the flow of mango from producers to ultimate consumers they are follows;

Producer – Pre-harvest contractor – Commission agent – Wholesaler – Retailers – Consumers

Producer – Pre-harvest contractor – Commission agent– Retailers – Consumers

Producer – Pre-harvest contractor – Wholesaler – Retailers - Consumers

Producer – Pre-harvest contractor – Retailers – Consumers

The marketing charges incurred by pre-harvest contractors in channel 1, 2 and 3 was Rs.303 and in channel 4 Rs.209. In channel 1 and 3 the per quintal expenses on transportation, loading, and unloading and mandi charges of the wholesaler were Rs. 235.60 and Rs. 85.60. The total expenses made by retailers were Rs.47.50, Rs.35.00 Rs.32.00 and Rs.22 in channel 1, 2, 3 and 4 respectively. The margin of pre harvest contractor in consumer's rupee was the highest at Rs. 131.44 per quintal (7.33 per cent) in channel 4, whereas for commission agent Rs.46.30 (2.28 per cent) and Rs. 52.30 (3.11 per cent) per quintal in the channel 1 and 2 respectively. The margin of the retailers was the highest Rs.447.8 (26.34 per cent) in channel 4. The price paid by consumer is highest (Rs.2029.46) in channel 1 followed by channel 3 (Rs.1924.36), 4 (Rs.1700.30) and channel 2 (Rs.1682.14).

**Srivastava S.C., B.S. Gupta and H.P. Singh, (2008)**, Conducted study on Economic analysis of marketing of soybean in Mandsaur District of Madhya Pradesh. The data collected from sample

farmers, village merchants, processors, wholesalers, retailers and consumers by interviewing them with the help of specifically designed and pre-tested schedule. The lowest marketing cost incurred by the farmers in channel-II was due to the fact that in this channel minimum number of intermediaries was involved in marketing of soybean. The net margin for village merchant was 13.9 per cent in case of channel-I whereas the wholesaler's net margin was 4.7 and 6.2 per cent in channel-I and II. Processors and retailers net margin was 10.6, 12.0, 12.2 and 40.8, 46.2 and 47.0 the per cent in Channel-I, II and III respectively. The producers share in consumer's rupee was low in channel-I. The marketing efficiency was estimated to be 2.18, 2.47 and 2.44 per cent for channel-I, II and III.

## METHODOLOGY

### Research Design

Descriptive research is used for the study by categorizing farmers into small, medium and large farmers. In order to study the fluctuations in the price of pomegranate, wholesale price index is constructed. Further, the analyses of constraints in marketing of pomegranate are studied using rotated factor loading and then clustering of factors into statements. On the other hand, Garrett's ranking technique is used to rank the constraints regarding marketing of pomegranate. At the same time to study the degree of correlation KMO and

Bartlett's Test for Constraints in marketing of pomegranate is used.

### Sources of Data

For evaluating the specific objectives of the study, necessary data were obtained from both primary as well as secondary. The primary data were obtained from the sample farmers through personal interview method with the help of structured questionnaire. Secondary data was collected from Directorate of

Horticulture, District Horticulture Officer, and Assistant Horticulture officer and from various journals and annual reports.

### Period of data collection

The research study regarding "**Efficiency of Marketing Channels for Pomegranate in Koppal District of Karnataka**" was carried out for the agricultural year 2012-13.

### Sampling Procedure

Multistage random sampling technique was adopted in the selection of the district, taluks and villages. Koppal district was selected purposively for the study since it ranked first in the area under pomegranate cultivation in the state with about 1400 hectare. From the selected sample taluks of Koppal district, list of villages cultivating pomegranate in the large scale were selected for the study restricting sample size to 100 respondents.

## RESULTS AND DISCUSSION

### Existing Logistics Setup in Pomegranate marketing

Most of the growers in the study area were found to dispose their produce through channel-III, i.e. commission agents. In spite of it, three predominant pomegranate marketing channels were identified in the study area which is as under:

Channel – I: Producer – Retailer – Consumer

Channel – II: Producer – Pre-harvest contractor – Commission agent – Retailer – Consumer

Channel – III: Producer – Commission agent – Retailer – Consumer

The percentage of farmers selling pomegranate through different channels, along with quantity of produce marketed is presented in the Table-1. The data in the

table reveals the most prevalent marketing channel in pomegranate trade is channel-III, through which 64 per cent of the farmers disposed their produce with a corresponding quantity of 445.45 MT. Channel-II is next though which 24 per cent of the sample farmers with 185 MT of fruits followed by channel-I with 12 per cent of farmers with a quantity of 175.75 MT are sold through this channel. That majority of the farmers sell their produce through Channel-III. The percentage of when compared with other category is very high closely followed by channel-II.

The marketing cost, its margin and price spread among small, medium and large farmers along with pre-harvester/wholesaler/retailer in marketing pomegranate has presented in table-2

With regard to the price received by the producer, the data in the table reveals that among various categories of farmers, net price received by large farmers is comparatively more than the other two categories of farmers. At the same time it is also observed that medium farmers received least net price when compared to large farmers and small farmers. On the other hand it is evident from the data in the above table that net price received through channel – I is more when compared to channel – II and channel – III. In other words, large farmers receive about 70 percent of the share in purchase price of consumer in channel – I as against to about 62 and 59 percent in channel – II and channel – III respectively. On the other hand the range between medium farmers and large farmers in receiving net price is more in channel – I when compared to other two channels.

With respect to the acquiring cost incurred, it is noticed that the acquiring cost is more in channel – II followed by channel – I and channel – III. At the same time the marketing cost for pre-harvester

is more when compared to commission agents/ wholesaler or retailer and marketing cost is more in channel – I than in other two channels.

From the point of profit, it is traced out that, major percentage of profit is enjoyed by the producer closely followed by retailer and then by commission agents/ wholesaler and pre-harvester. The profit margin for producer is more in channel – I accounting for about 64 percent followed by channel – II and channel – III which accounts for about 58 and 57 percent respectively. On the other hand the price spread is observed to be more in channel – III accounting for about 42 percent followed by channel – II which is about 42 percent when compared to channel – I which is only about 27 percent.

For the purpose of ranking the constraints in marketing of pomegranate, Garrett's ranking was conducted assigning suitable weights with the help of Garrett's conversion table. The above table represents the total score along with mean score and its rank assigned according to Garrett's technique. The data in the above table reveals that lack of processing facilities, absence of marketing information, facilities at market place, skilled labor and transport facility bags the first five ranks revealing that producers encounter these constraints more severely than other constraints in marketing their produce. Like that method of sale, fluctuations in market price, risk bearing, timely payment and commission charges are least encountered constraints by the producers in marketing pomegranate and the remaining constraints are of medium nature.

In order to cluster those constraints which were encountered by producer in marketing pomegranate, factor analysis and cluster analysis were

carried out and the results of both are presented in table 5 and table 6. However, before doing rotated loading and cluster analysis, KMO and Bartlett's test was done to measure the sample adequacy which can be further used to compare the magnitudes of the observed correlation coefficients in relation to the magnitudes of the partial correlation coefficients. The test revealed that KMO value at 0.667 indicating that the data can be considered for analysis as it is more than 0.50 and can proceed with factor analysis.

Further, in factor analysis as the communalities value for all the factors was 1 reveals that the common factor explains all the variance. However, the initial solution and eigen values revealed that about 63 percent of variance were explained and out of 12 factors four factors were extracted having capacity of explaining about 63 percent of the variance. However, in order to get clear indication how each item correlates with each factor, rotation solutions was used and the result of rotated factor loading for constraints in marketing pomegranate is presented in table 6.

Rotation is a method used to simplify interpretation of a factor analysis. It can be seen from the above table that Fluctuation in market price and Lack of processing facilities are highly correlated with factor 1. Like that factor 2 is highly correlated with Timely payments and Commission charges; further factor 3 is highly correlated with Method of Sale and Storage Facility, factor 4 with Absence of market information and factor 5 with Risk bearing and Transportation facility.

On the basis of rotated factor loading, clustering of factors into statements are done and presented in the above table 7. Based on the above table, it can be stated that the first factor is capable in explaining about 25 percent of the constraints in marketing of

pomegranate which comprises transport facility, method of sale, skilled labor facilities and absence of market information along with low price. Like that the second factor which explains about 17 percent of the constraints constitutes facilities at market place, risk bearing and timely payment. While the third component explaining about 12 percent concentrated with storage facility and lack of processing facilities. Finally, fluctuations in market prices and commission charges which were capable of explaining only about 9 percent of the constraint constituted the fourth component.

Based on the above information it can be stated that the first component factors are with relation to infrastructure facility, the second with management, the third with storage/ processing and the last one with finance.

## CONCLUSION

With all the above findings, it can be concluded that marketing which is the place of exchange of goods and commodities is carried out through different channels especially with regard to the marketing of agriculture produce. Like that with respect to the marketing of pomegranate it is observed that there the three major channels of pomegranate market. Among those three channels channel – I is more profitable and efficient with respect to the producer as it gives him more profit when compared with other two channels. In other words, it can be stated that if producer market or sell their produce directly to the consumers it is more profitable or if he sells his produce to retailer it is also more profitable to him as the price spread in channel – I is less when compared with channel – II and channel – III where he disposes his produce either through pre-harvest contractors/ wholesalers/ commission agents. At the same time if producers are provided with effective infrastructure

facilities like proper market information, providing effective storage facilities, proper processing facilities, and skilled labor and so on, will result in more profit margin. However, it can be concluded that among three channels, marketing efficiency is more in channel – I when compared to channel – II and channel – III.

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**Table-1 Quantity of Produce sold in different Channels**

Sl. No.	Farmers Category	Marketing Channels	No. of Farmers	Quantity of the Produce (Q)	Average Quantity(Q)
1	Small Farmers	Channel-I	08	56.22	7.02
		Channel-II	08	55.77	6.97
		Channel-III	26	188.44	7.35
2	Medium Farmers	Channel-I	1	46.28	6.49
		Channel-II	15	108.08	8.39
		Channel-III	28	204.83	7.31
3	Large Farmers	Channel-I	3	73.25	7.2
		Channel-II	3	21.15	7.02
		Channel-III	8	52.27	6.52

Source: Field Survey

**Table 2: Marketing cost, Margin and Price Spread (Rs./ Quintal)**

Sl. No.	Particulars		Channel – I		Channel – II		Channel – III	
			Rs.	%	Rs.	%	Rs.	%
1	Price received by the producer	S F	9437.50	69.55	9250.00	58.18	9427.70	63.92
		M F	8860.00	65.29	8500.00	53.46	9068.40	61.48
		L F	10215.00	75.28	9900.00	62.26	9550.00	64.75
2	Marketing cost of producer	S F	933.31	6.88	---	---	941.47	6.38
		M F	896.97	6.61	---	---	946.7	6.42
		L F	757.93	5.59	---	---	936.88	6.35
3	Net price received by the producer	S F	8504.19	62.67	9250.00	58.18	8486.23	57.53
		M F	7963.03	58.68	8500.00	53.46	8121.70	55.06
		L F	9457.07	69.69	9900.00	62.26	8613.12	58.39
4	<b>Acquiring cost by</b>							
	a) Pre-harvest Contractor		---		9216.67	57.97	---	---
	b) Commission agent / Wholesaler		---		11520.83	72.46	8407.02	57.00
	c) Retailer		9832.50	72.46	12903.32	81.15	9668.07	65.55
5	<b>Marketing cost for</b>							
	a) Pre-harvest Contractor		---		810.00	5.09	---	---
	b) Commission agent / Wholesaler		---		430.00	2.70	550	3.73
	c) Retailer		375.00	2.76	150.00	0.94	250	1.69
6	<b>Profit for</b>							
	a) Pre-harvest Contractor		---		1494.16	9.40	---	---
	b) Commission agent / Wholesaler		---		952.49	5.99	711.05	4.82
	c) Retailer		4292.50	30.73	2846.68	17.90	4831.93	32.76
6	Marketing Margin/ Price Spread - Retailers		3762.50	26.93	6683.33	42.03	6342.98	43.00
7	Purchase price of Consumer		13970.00	100	15900.00	100	14750.00	100
8	<b>Market Efficiency</b>		1.86		1.37		1.15	

Source: Filed Survey

**Table 3: Problems Associated with Marketing of pomegranates:**

Sl. No.	Particulars	1	2	3	4	5
1	Transport Facility	73	1	1	16	9
2	Storage Facility	65	3	1	29	2
3	Facilities at Market Place	67	13	4	14	2
4	Method of Sale	6	75	3	3	13
5	Fluctuations in Market Price	20	28	7	16	30
6	Skilled Labor Facilities	68	12	2	11	7
7	Absence of Marketing Information	83	0	8	6	3
8	Risk Bearing	11	2	18	53	15
9	Timely Payment	15	14	2	58	11
10	Commission Charges	26	44	12	5	13
11	Low Price	48	19	10	18	5
12	Lack of Processing Facilities	82	6	2	7	3

Source: Primary Data

**Table 4: Garrett's ranking for Constraints in marketing of pomegranate**

Sl. No.	Factors	Total Score	Mean Score	Rank
1	Transport Facility	6450	64.50	5
2	Storage Facility	6315	63.15	6
3	Facilities at Market Place	6615	66.15	3
4	Method of Sale	5545	55.45	9
5	Fluctuation in Market Price	4860	48.60	10
6	Skilled labor Facilities	6535	65.35	4
7	Absence of Marketing Information	6940	69.40	2
8	Risk Bearing	4380	43.80	12
9	Timely Payment	4660	46.60	11
10	Commission Charges	5715	57.15	8
11	Low Price	6085	60.85	7
12	Lack of Processing Facilities	6965	69.65	1

Source: Table 3

**Table 5: KMO and Bartlett's Test for Constraints in marketing of pomegranate**

Kaiser-Meyer-Olkin Measure of Sample Adequacy	Bartlett's Test of Sphericity		
	Approximate Chi-Square	Degree of Freedom	Significance
0.667	288.619	66	0.000

Source: Table 3

**Table 6: Rotated Factor loading for constraints in marketing pomegranate**

Sl. No.	Particulars	Component				Communalities
		1	2	3	4	
1	Transportation Facility	<b>0.759</b>	-0.182	0.011	0.215	0.655
2	Storage Facility	-0.142	0.041	<b>0.840</b>	0.026	0.728
3	Facilities at Market Place	0.162	<b>-0.439</b>	0.350	0.133	0.359
4	Method of Sale	<b>0.837</b>	0.069	0.068	-0.085	0.717
5	Fluctuations in Market Price	0.187	0.393	0.225	<b>-0.685</b>	0.710
6	Skilled Labor Facilities	<b>0.621</b>	-0.112	0.402	0.268	0.632
7	Absence of Market Information	<b>0.728</b>	-0.118	-0.158	-0.339	0.684
8	Risk Bearing	-0.073	<b>0.786</b>	0.070	0.158	0.653
9	Timely Payment	0.111	<b>0.687</b>	-0.105	-0.142	0.516
10	Commission Charges	0.269	0.315	0.294	<b>0.681</b>	0.722
11	Low Price	<b>0.605</b>	0.378	0.020	0.055	0.513
12	Lack of Processing Facilities	0.332	-0.468	<b>0.596</b>	-0.105	0.696
Total Eigen values		3.008	2.036	1.457	1.082	7.583
Percentage of variance		25.070	16.966	12.145	9.017	63.197
Cumulative percentage of variance		25.070	42.036	54.180	63.197	

Source: Table 3



**Table 7: Clustering of statements regarding constraints in marketing pomegranate**

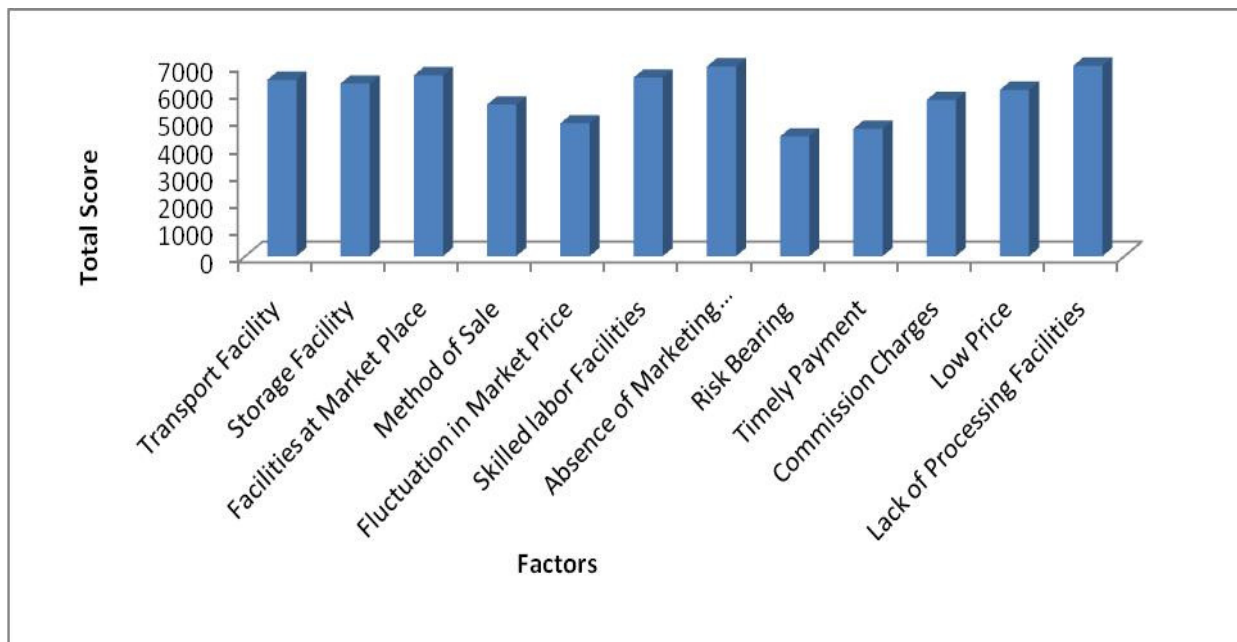
Factors	Sl. No.	Production Problem	Rotated Factors Loadings
I (25.070)	1	Transport Facility	0.759
	4	Method of Sale	0.837
	6	Skilled Labor Facilities	0.621
	7	Absence of Market Information	0.728
	11	Low Price	0.605
II (16.966)	3	Facilities at Market Place	-0.439
	8	Risk Bearing	0.786
	9	Timely Payment	0.687
III (12.145)	2	Storage Facility	0.840
	12	Lack of Processing Facilities	0.596
IV (9.017)	5	Fluctuations in Market Prices	-0.685
	10	Commission Charges	0.681

Source: Table 6

## Appendix: Garrett's ranking for constraints in marketing of pomegranate

Sl. No.	Rank		I	II	III	IV	V	Total	Total Score	Mean Score	Rank
	Factors (x)	Scale	75	60	50	40	25				
1	Transport Facility	f	73	1	1	16	9	100	6450	64.50	5
		fx	5475	60	50	640	225				
2	Storage Facility	f	65	3	1	29	2	100	6315	63.15	6
		fx	4875	180	50	1160	50				
3	Facilities at Market Place	f	67	13	4	14	2	100	6615	66.15	3
		fx	5025	780	200	560	50				

4	Method of Sale	f	6	75	3	3	13	100	5545	55.45	9
		fx	450	4500	150	120	325				
5	Fluctuation in Market Price	f	20	27	7	16	30	100	4860	48.60	10
		fx	1500	1620	350	640	750				
6	Skilled labor Facilities	f	68	12	2	11	7	100	6535	65.35	4
		fx	5100	720	100	440	175				
7	Absence of Marketing Information	f	83	0	8	6	3	100	6940	69.40	2
		fx	6225	0	400	240	75				
8	Risk Bearing	f	11	2	18	53	15	100	4380	43.80	12
		fx	825	120	900	2160	375				
9	Timely Payment	f	15	14	2	58	11	100	4660	46.60	11
		fx	1125	840	100	2320	275				
10	Commission Charges	f	26	44	12	5	13	100	5715	57.15	8
		fx	1950	2640	600	200	325				
11	Low Price	f	48	19	10	18	5	100	6085	60.85	7
		fx	3600	1140	500	720	125				
12	Lack of Processing Facilities	f	82	6	2	7	3	100	6965	69.65	1
		fx	6150	360	100	280	75				

**Graph 1: Garrett's ranking for Constraints in marketing of pomegranate**

Source: Table 4

# “Unveiling green gestures”: snapshot of Indian companies sustainability disclosure habits

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## ABSTRACT

Businesses today are facing multiple challenges not only in maintaining its current position but also surviving in the downturn of economy. The survival depends upon the continued demand from the society, continuous supply of the resources from the environment to feed the emerging demand and ability to remain solvent financially by managing the business processes efficiently and effectively. In order to sustain themselves in the long run, organizations must, therefore, strive to achieve better performance across the three dimensions of the Triple Bottom Line.

This study provides a snapshot and comparison of the performance of 150 Indian companies, their corporate sustainability initiatives undertaken across different industry sectors, their turnover, listing on BSE, their timely alertness in appointing the post of sustainability officer, their environmental awareness in acquiring sustainability related certifications and disclosing the relevant information under sustainability reporting practices by them.

**Key words:** corporate sustainability, sustainability reporting, disclosure by Indian companies

## INTRODUCTION

We have been observing increase in problems in all the three spheres of life-  
1) Social issues (wars, increase in crime, rape, poverty, hunger, cultural dilution, human values degradation)  
2) environment issues (loss of natural habitat for species, degradation of flora and fauna, ecological imbalance, deforestation, excessive mining, floods, droughts, global warming, increase in GHGs.)  
3) Economic issues (trade imbalances, inflation, recessions, currency devaluation, capital crunch, increase in business risk, degradation of public utilities, diminishing standard of living, falling GDPs and Growth rates)

These are considered as vital indicators for assessing “human Life quality” in the world. As we observe the indicators showing a red light to caution the humanity to take strong and decisive steps to curtail and abort the ill effects of these problems. The root cause of this is the excessive recourse use by human and

industrial activity on the face of earth. The resource use is so fast due to increase in global population and indiscriminate greed of people that replenishment of such resource is not matched by the natural cycle of earth’s capability.

This leads to the issue of sustainable development. It is an umbrella that attempts to bridge the divide between economic growth and environmental protection, while taking into account other issues traditionally associated with development. It is defined by the Brundtland report as the development that “meets the needs of the present without compromising the ability of future generations to meet their own needs”.<sup>1</sup>

## Concept of sustainable development and sustainability reporting

Sustainable development has three broad goals: environmental stewardship, social responsibility and economic prosperity, for both the organization and its

stakeholders. In a successful sustainability-focused business strategy, these three goals will be inter-related and supportive of each other. Developing such a strategy requires careful study and analysis to fully understand sustainability-related opportunities and threats. Furthermore, such business strategies must be customized to meet an organization's core competencies, financial situation, skills, resources, and the sustainability challenges it faces. Environmental stewardship, corporate social responsibility, and other such initiatives are required to be taken in this regard by the corporate sector. These goals are inter-related, and strategies for all three cornerstones are best developed simultaneously.

The sustainability issues are closely linked with the Industrial activities of people and thus the businesses are expected to take the heed of these issues. The survival of businesses is equally dependant on the sustainability practices they adopt to improve their business's ability to survive and sustain over a long period of time.

**Theoretical framework:** There was a strong need felt by social scientists to leave the Agency theory (Friedman 1980) and to embrace the stakeholder theory (Freeman 1984) which affirms the relationship of a firm with many stakeholders as its activities create negative environmental impact, and it must act in conformity with society's expectations (stakeholder - any group or individual who can affect or is affected by the achievements of an organization "s objectives) The "corporate social performance"(CSP) framework which combines the principles and philosophy of societal needs with the economic responsibilities of a business (Peston and Caroll) was found more apt to be adopted

in the current environmental and economic circumstances.<sup>2</sup>

In order to sustain themselves in the long run, organizations must, therefore, strive to achieve better performance across the three dimensions of the Triple Bottom Line. The „Triple Bottom Line“ (TBL), a term coined by Elkington (1997), implies that corporations should focus "not just on the economic value they add, but also on the environmental and social value they add – and destroy". Today's organizations require adopting a strategic commitment which includes a) managing and renewing scarce resources b) minimizing the environmental impact of their operations and c) promoting responsible consumption habits. The maintenance of a balance between such cause and effect is influenced by the manner in which the business is governed. Therefore, sustainability encompasses the three dimensions of Environment, Social Criteria and Governance, known as the „ESG parameters“. ESG refers to the three main areas of concern that have developed as central factors in measuring the sustainability and the ethical impact of an investment in a company or business. Therefore only measuring, disclosing and reporting information and initiatives on sustainability will conclusively settle the open question of whether businesses practicing sustainability are indeed sustainable.<sup>3</sup>

In the management field, sustainable development theory has attempted to broadly redefine the global societal role of the business corporation (Gladwin, Kennelly, and Krause, 1995; Hart, 1997; Sharma, Vredenburg, and Westley, 1994; Shrivastava, 1995; Starik and Rands, 1995; Westley and Vredenburg, 1996). Researchers have proposed that our future lies in building sustainable enterprises and an economic

reality that connects industry, society, and the environment (Hart, 1997; Senge and Carstedt, 2001). According to Elkington (1997), the firm's ultimate objective is not singular (create value for its shareholders) but rather threefold (create economic, ecological, and social value). Therefore, the central value of the sustainable firm is not economic growth but sustainable development. In other words, to succeed in this endeavor it is essential to develop business models and products that work financially, in addition to being socially, ecologically, and ethically correct. Another stream of literature has sought to demonstrate how firms may gain competitive advantage from sustainability strategies through efficiency cost savings, and product stewardship (Hart and Ahuja, 1996; Porter and van der Linde, 1995; Shrivastava, 1995), acquisition of strategic resources and capabilities (Hart, 1995; Rodríguez, Ricart and Sánchez, 2002), and development of learning and dynamic capabilities 4

**Corporate Sustainability-** is not only environmental caring but a concept of long term continued existence of a business firm. Sustainable development is increasingly receiving attention from proactive firms. A consistent economic framework which could be used as the economic foundation of both sustainable development and firm strategies towards it. Sustainable development requires organizational perspective which could change the business perspective dramatically.

The most broadly accepted criterion for corporate sustainability constitutes a firm's efficient use of natural capital. This eco-efficiency is usually calculated as the economic value added by a firm in relation to its aggregated ecological impact. (Schaltegger, S. & Sturm, A. 1998. *Eco-Efficiency by Eco-Controlling*. Zürich: vdf.) This idea has

been popularized by the World Business Council for Sustainable Development (WBCSD) under the following definition: "Eco-efficiency is achieved by the delivery of competitively priced goods and services that satisfy human needs and bring quality of life, while progressively reducing ecological impacts and resource intensity throughout the life-cycle to a level at least in line with the earth's carrying capacity." (DeSimone and Popoff, 1997: 47) 5

### About the study

This study was an exploratory research. The population was consisted of Indian companies. To draw the names of companies initially BSE 500 list was used and then the search was broadened by including non-listed companies as well. A survey sampling process was used to collect the responses from the managerial level employees. There were 150 Indian companies responded to this survey. The study focused on the actions taken by Indian companies with regard to the various sustainability initiatives and certification acquired by them.

The objectives were

- i) To study the sustainability certification acquired by the companies
- ii) To understand the sustainability reporting pattern among the respondent companies by
  - a) Industry/sector wise
  - (b) Turnover wise
  - (c) BSE listing wise

The various disclosure or reporting parameters included in the study were

ISO 14000  
Euro Norms  
LEED certification  
GRI  
UN Global Compact  
Carbon Disclosure  
Emission Reduction  
IIRC  
Other than these

## Trends in sustainability reporting in India

In the Indian context sustainability reporting has been undertaken by the Indian corporate sector for over the decade now. Though the voluntary disclosures are sporadic and limited, the India Inc. is gearing up to adopt and embrace the reporting practices more enthusiastically.

India's business and investment communities are beginning to recognize the benefits of sustainability reporting and organizational transparency. Involvement and ownership by top management-the management structure that formulates strategies and runs the operations of the company-is a critical part of the sustainability process, given their ability to effect changes and to develop a long-term vision and goals for the organisation.

According to one research, only 35% of the top 100 BSE/NSE listed companies actually release sustainability reports.

The Bombay Stock Exchange, India's largest stock exchange, recently invited GRI Focal Point India to be part of their Advisory Group and they are now very keen to collaborate with us on building the reporting capacity of their listed companies.

In November 2011 the Securities and Exchange Board of India (SEBI) mandated listed companies to report on their Environmental, Social and Governance Initiatives. As a result, uptake of sustainability reporting is expected to rise in the coming year. For this to happen, companies need support: they have expressed the need for access to more information and assistance in developing their strategies for sustainability.

The most recent example of positive change was demonstrated last month, when SEBI distributed a circular

reinforcing its commitment to business responsibility reporting. In the circular SEBI stated that it should be mandatory for top 100 listed entities to produce business responsibility reports.<sup>7</sup>

## Sustainability Reporting / certification acquisition by Indian companies:

**1.ISO 14000** - The ISO 14000 family addresses various aspects of environmental management. It provides practical tools for companies and organizations looking to identify and control their environmental impact and constantly improve their environmental performance. ISO 14001:2004 and ISO 14004:2004 focus on environmental management systems. The other standards in the family focus on specific environmental aspects such as life cycle analysis, communication and auditing

The newly published ISO 14045:2012, *Environmental management – Eco-efficiency assessment of product systems – Principles, requirements and guidelines*, describes the principles, requirements and guidelines for eco-efficiency assessment for product systems. "Eco-efficiency is an aspect of sustainability relating the environmental performance of a product life cycle to its value. In a world with growing economies, an eco-efficiency assessment is a necessary management tool to decrease the overall environmental impact."

**2 Euro Norms** - define the acceptable limits for exhaust emissions of new vehicles sold in EU member states. The emission standards are defined in a series of European Union directives staging the progressive introduction of increasingly stringent standards. Since the year 2000, India started adopting European emission and fuel regulations for four-wheeled light-duty and for heavy-duty vehicles. Indian own

emission regulations still apply to two- and three-wheeled vehicles.

On October 6, 2003, the National Auto Fuel Policy has been announced, which envisages a phased program for introducing Euro 2 - 4 emission and fuel regulations by 2010. The implementation schedule of EU emission. 9

**3 LEED certification** - Leadership in Energy and Environmental Design (LEED) is a suite of rating systems for the design, construction, operation, and maintenance of green buildings, homes and neighbourhoods.

Developed by the U.S. Green Building Council (USGBC), LEED is intended to help building owners and operators find and implement ways to be environmentally responsible and resource-efficient. Proposals to modify the LEED standards are advanced and publicly reviewed by the USGBC's almost 20,000 member organizations.

Started in 1998, LEED standards have been applied to more than 7,000 projects in the United States and 30 countries, covering more than 1.501 billion square feet (140 km<sup>2</sup>) of development area 10

LEED India certification provides independent, third-party verification that a building project meets the highest performance standards. The LEED India plaque awarded by the IGBC is recognition of the project achievement. 11

**4 GRI The Global Reporting Initiative-** (GRI) is a leading organization in the sustainability field. GRI promotes the use of sustainability reporting as a way for organizations to become more sustainable and contribute to sustainable development. GRI has pioneered and developed a comprehensive Sustainability Reporting Framework that is widely used around the world.

GRI is an international not-for-profit organization, with a network-based structure. Its activity involves thousands of professionals and organizations from many sectors, constituencies and regions. The Framework is developed collaboratively with their expert input: international working groups, stakeholder engagement, and due process – including Public Comment Periods – help make the Framework suitable and credible for all organizations. GRI's Secretariat is located in Amsterdam, The Netherlands, and there are GRI Focal Points – regional offices – in Australia, Brazil, China, India, South Africa, and the USA. More than 600 Organizational Stakeholders – core supporters – play a vital part in endorsing GRI's mission. A sustainability report also presents the organization's values and governance model, and demonstrates the link between its strategy and its commitment to a sustainable global economy. 12

Around 80 Indian companies from various sectors produce sustainability reports, and about 60 of these publicly declare that they use GRI's Sustainability Reporting Guidelines. 13

**5 UN Global Compact** - The UN Global Compact is the world's largest corporate citizenship and sustainability initiative. Since its official launch on 26 July 2000, the initiative has grown to more than 10,000 participants, including over 7,000 businesses in 145 countries around the world.

The Global Compact involves all relevant social actors: companies, whose actions it seeks to influence; governments, labour, civil society organizations, and the United Nations as an authoritative convener and facilitator. 14

The United Nations Global Compact is a strategic policy initiative for businesses that are committed to aligning



their operations and strategies with ten universally accepted principles in the areas of Human Rights, Labour, Environment and Anti-corruption. With over 8700 corporate participants and others stakeholders from over 130 countries, it is the largest voluntary corporate responsibility initiative in the world. UNGC has emerged as the most sought after brand in CSR (CSR is now regarded as a basic Corporate Responsibility). Indian Companies / Organizations have significant representation in UNGC with nearly 280 companies as its signatories<sup>15</sup>

The United Nations Global Compact Office (UNGCO) has delisted nearly 600 companies, including 32 Indian ones for failure to comply with the integrity measures introduced in 2004.

The list of firms removed from the scheme features a wide range of companies, including: Cement Corporation of India, Hindustan Aeronautics, Hindalco, Kundermukh Iron Ore, Apollo Hospitals, Atlas Cycles, Hindustan Organics Chemical Limited, Shipping Corporation of India, MMTC, MTNL, Punjab National Bank and Unit Trust of India to name few. The following companies from India have been delisted by the UN:Abar Group, Artificial Limbs Manufacturing Corp of India, Atlas Cycles Limited India, Apollo Hospital, Bharat Aluminium Company Limited India, Cement Corporation of India, Central Cottage Industries, Dena Bank India, Dredging Corporation of India, Engineering Projects India Limited, Excel Industries Limited India, Heubach Colour Private Limited India, Hindalco Industries Limited, Hindustan Aeronautics Limited, Hindustan Organic Chemicals Limited, Hi-Tech Carbon India, Infrastructure Development Finance Company Limited, Kudremukh Iron Ore Company, Mahanagar Telephone Nigam Limited, Mazagon Dock Limited, Metalman Auto

Private. Limited, Mineral Exploration Corporation, MMTC, North Eastern Electric Power Corporation Limited, Punjab National Bank, Scooters India Limited, Shipping Corporation of India Limited, Transnational Supply & Service, Unit Trust of India, Wadia Group and Water & Power Consultancy Services Limited.<sup>16,17</sup>

**6. Carbon Disclosure** - The Carbon Disclosure Project (CDP) is an independent not-for-profit organisation registered in England and holds the largest database of primary information on corporate climate change in the world. Organisations from major economies across the world measure and disclose their greenhouse gas (GHG) emissions, water use and climate change strategies through CDP. An annual questionnaire from CDP is sent inviting disclosures on GHG emissions and climate change parameters to select companies based on their market capitalisation in the chosen countries and the relevant information on climate change is put out for increasing transparency in areas of climate related investment and other risks. <sup>18</sup>

These disclosures can be made public or can be restricted to only CDP signatories. Since 2006, CDP has been inviting top NSE-listed companies to respond to their questionnaire. It started with a request to 110 companies in the first year and then expanded the sample to NSE 200 from 2007 onwards.

IT companies Tata Consultancy Service (TCS) and Wipro are among the top ten companies in the leadership index for the Carbon Disclosure Project in India for 2011, says the latest report. The top 10 companies in the Carbon Disclosure Leadership Index for the Carbon Disclosure Project in India for 2011 include TCS, Wipro, Yes Bank, ACC, Tata Chemicals, Tata Global Beverages, Sesa

Goa, GVK Power & Infrastructure, ABB and Tata Power. Ahead of the upcoming COP 17 in Durban, The India 200 report, also entitled Accelerating low carbon growth, reveals this year's leaders in carbon disclosure. It provides significant insights on how leading Indian companies are demonstrating global best practices in disclosing their carbon emissions and setting performance targets for mitigation of GHG emissions. The report was prepared by CDP along with CII-ITC Centre of Excellence for Sustainable Development, WWF India and the India report partner, Ernst & Young Pvt. Ltd. 19

**BSE Launches India's First Carbon-Based Thematic Index „BSE CARBONEX“ with CDP as Data Partner.** Investors, particularly the Institutional Investors, feel the need to address the long term investment consequences of climate change in order to avoid sudden major adjustments. BSE CARBONEX has been created as a response to their identified needs to develop sophisticated approaches to portfolio management that incorporate climate change risk and opportunity. 53 companies responded to CDP of which 10 referred to a parent or holding company's response 20 another report presents the results of the first-ever voluntary disclosure of the carbon emissions of Indian companies. It is based on the submissions of 39 Indian corporations in response to the first information request sent by the Carbon Disclosure Project. Undertaken on behalf of 315 institutional investors, representing over US dollar 41 trillion of assets under management, the report provides global investors with an analysis of how India's largest companies are responding to climate change.

Key findings include: out of 110 companies selected for survey, the report reflects the variable understanding of the need for carbon disclosure within Indian

industry. The fact that 65 per cent of the 110 companies selected for the survey did not respond to the questionnaire shows, the report notes, an enormous amount of work still need to be done by Indian companies and investors to catch up with their global peers.<sup>21</sup>

**6. Emission Reduction-** Certified Emission Reductions (CERs) are a type of emissions unit (or carbon credits) issued by the Clean Development Mechanism (CDM) Executive Board for emission reductions achieved by CDM projects and verified by a DOE under the rules of the Kyoto Protocol.<sup>22</sup> India has aggressive renewable energy targets and industry energy efficiency policies, but faces significant infrastructure challenges, which may derail otherwise good policy. India is growing rapidly and represented 8% of the increase in global energy-related CO<sub>2</sub> emissions between 2000 and 2010.<sup>23</sup>

**7. IIRC Pilot Program** -The IIRC Pilot Programme underpins the development of the International Integrated Reporting Framework. The group of organizations participating in the Pilot Programme have the opportunity to contribute to the development of the Framework and to demonstrate global leadership in this emerging field of corporate reporting. Through the Pilot Programme the principles, content and practical application of <IR> are being developed, tried and tested by businesses and investors. It will run until September 2014, this is after the publication of the International <IR> Framework in December 2013, thereby allowing participant's time to test the Framework during their following reporting cycle. This will enable the IIRC to assess <IR> outcomes and complete its work. The Pilot Programme comprises: The Business Network with over 100 businesses across the globe from multinational corporations

to public sector bodies The Investor Network with over 35 investors organizations.<sup>24</sup>

The Pilot Programme Investor Network (“the Investor Network”) of the International Integrated Reporting Council (IIRC) has identified a number of recommendations to assist preparers of integrated reports (“The 2013 Investor Critique”). The recommendations stem from a recent review of “selected reports” from the Pilot Programme Business Network (“the Business Network”).

The aim of the review was to “understand the strengths and shortfalls of today’s reporting from the perspective of providers of financial capital”. In total the reports of 21 pilot businesses were analysed by 14 institutional organisations. 25 TATA STEEL India was one of the participant companies from India in this initiative.<sup>26</sup>

## FINDINGS FROM THE STUDY

### Classification of companies:

The 150 companies were classified in 13 different industry sectors as shown in the following chart. Highest number (29%) of companies was from software sector, (19%) were from service sector and (14%) were from manufacturing sector. Other sectors represented as given in (Table 1).

### Companies Operating in:

The surveyed 150 companies were operating in India (series 1 given in blue), Abroad (series 2 given in red) and Both (series3 in green). Majority companies were from both category operating in India and Abroad. Their respective strength in number is given in (Table 2).

### Companies listed on BSE across the three turnover categories:

There were (series 1) companies listed on Bombay Stock Exchange and (series 2) were not listed across the three turnover categories. Some companies did

not mention the information about turnover. The companies are indicated in (Table 3).

### BSE listed companies across industry/sectors

The following table (Table 4) explains the number of companies Listed (series1 in blue) and Not Listed companies (series2 in red) across the 13 industry/sectors. Highest number of listed (25) and non-listed (18) companies were from software sector and the least were from Hospitality sector. Others are given in (table 4).

### Post of Sustainability Officers and the position they report to

When asked whether they have a post of sustainability officer in their company, (76%) of companies indicated that they have the post of sustainability officer in their company while (22%) did not have such post. (2%) of companies did not provide any information. The 114 companies who had sustainability officer’s post, the officers were reporting to various higher positions, like maximum 31% were reporting to other position officers like GM, Sr. Manager, DGM, Project leader etc. 30% were reporting to CEO while 6% did not indicate the position reported to. This is indicated in two tables in (table5).

### Turnover across industry/sectors

In the chart below (series1blue) indicates turnover of <100Cr. (Series 2 red) indicates turnover of 100-500Cr., (series3 green) indicates turnover of >500 Cr., and (series4 purple) does not give turnover information. Software has highest no. of >500Cr. Companies. See (Table 6)

### The sustainability certification acquired by the companies:

There were highest number (68) of companies acquire ISO 14000 certification,( 21) go for emission control, (18) observe Euro norms, (17) companies go for carbon disclosure,(12) are GRI reporting companies. There are 44

companies who did not acquire any certification.(24) companies had acquired other certifications like OSHA, Safety and Pollution norms, other series in ISO and Quality initiatives etc. It is shown in (Table 7).

### CONCLUSION

The study indicates that the majority of 150 companies surveyed in this study were more than 500 Cr. Companies and most of the companies were listed on BSE. 76% of the companies had a post of sustainability officer and most of these officers were reporting to CEO, MD or such high position official of the company, indicating that there were good amount of awareness and concern related to sustainability reporting and maximum disclosure certification were ISO series and emission control which was binding on the industries by law.

It is found that the awareness regarding sustainability is increasing in Indian industry and the big companies are the forerunners in this endeavour.

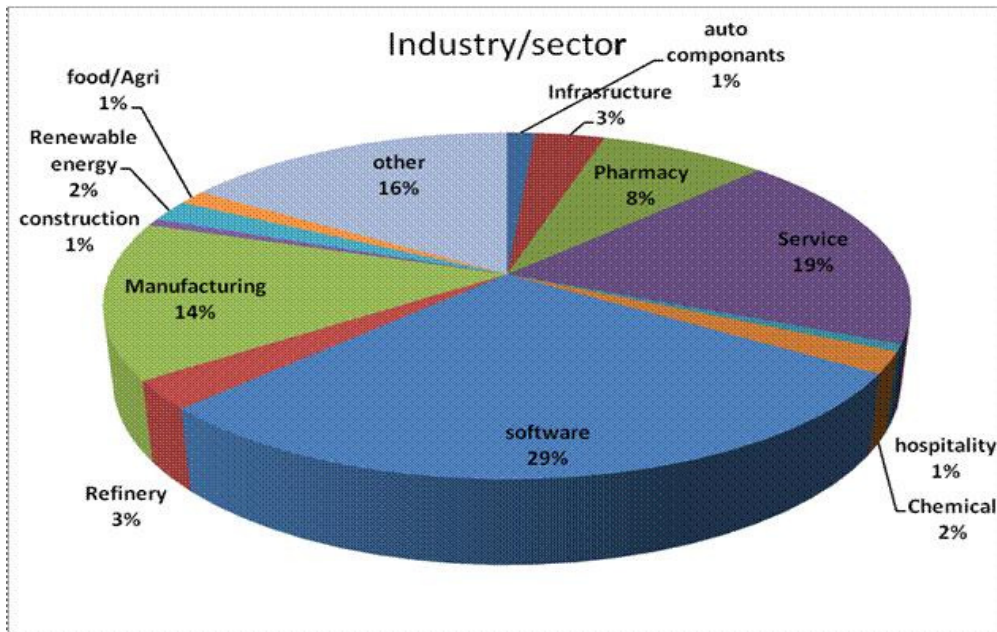
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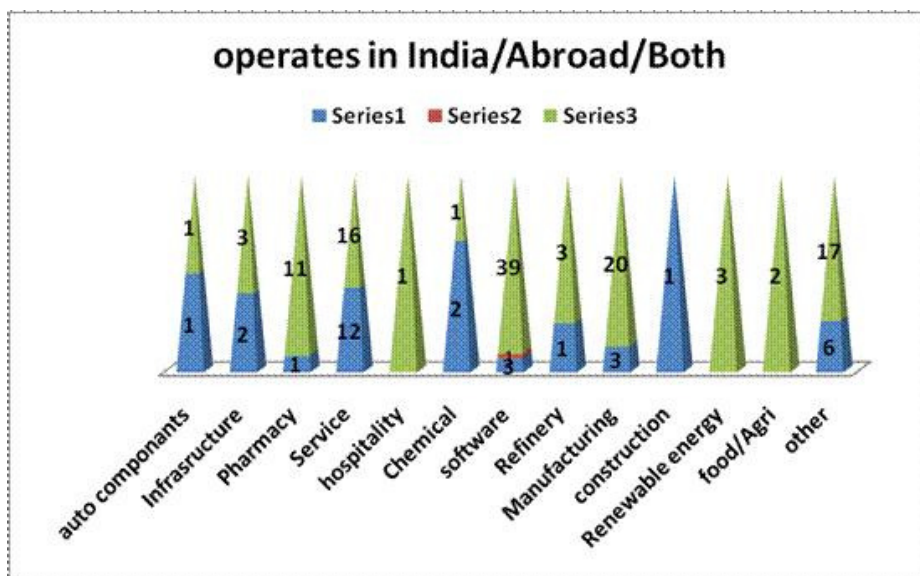
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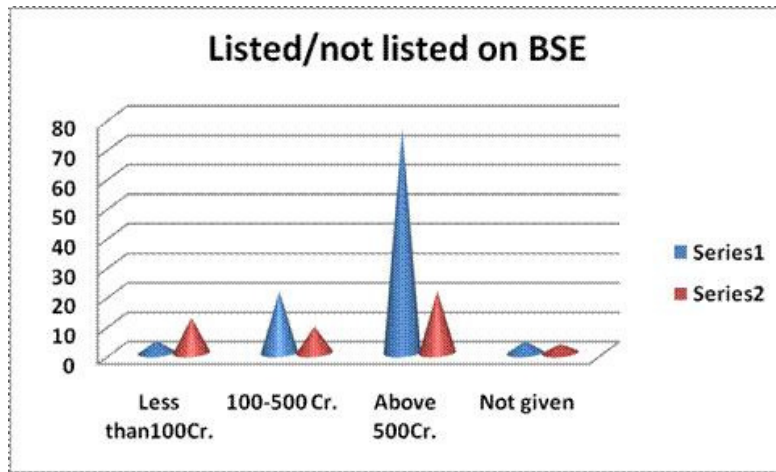
**Table 1: companies Industry/sector wise**



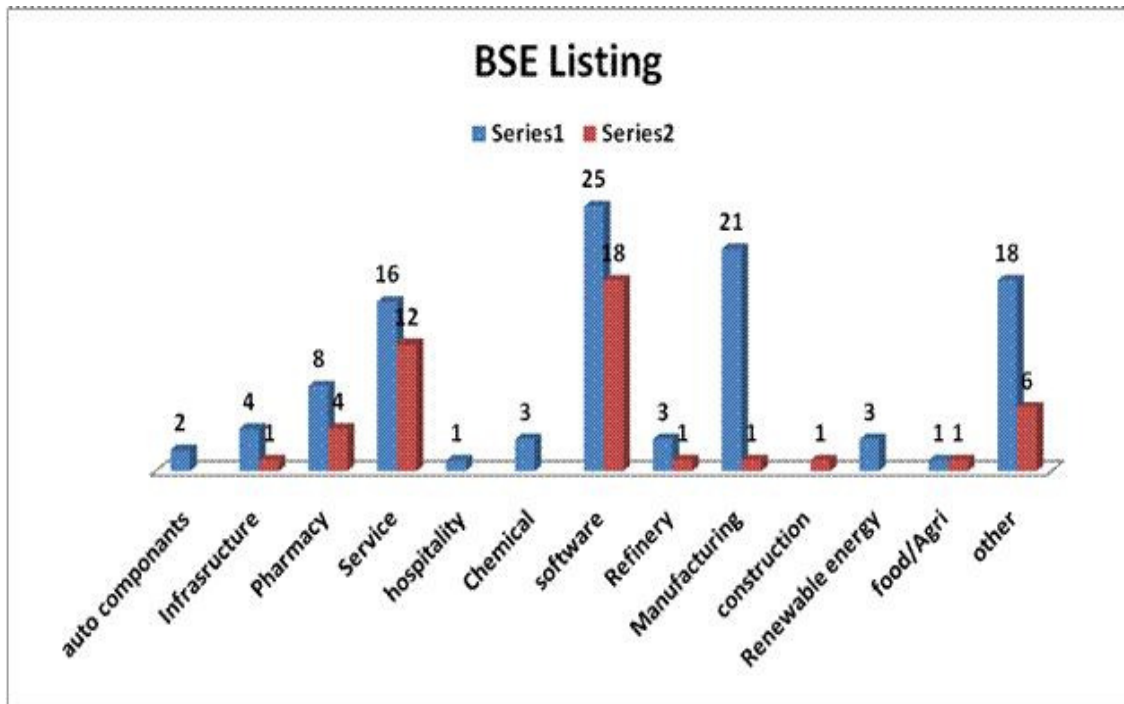
**Table 2: Companies operating in-**



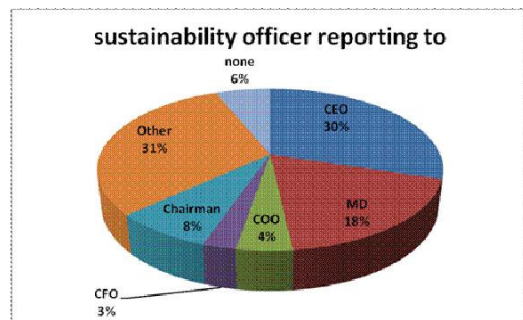
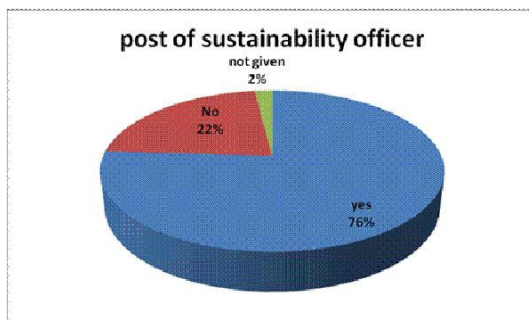
**Table 3: Companies listed on BSE across the three turnover categories:**



**Table 4: BSE listed companies across industry/sectors:**

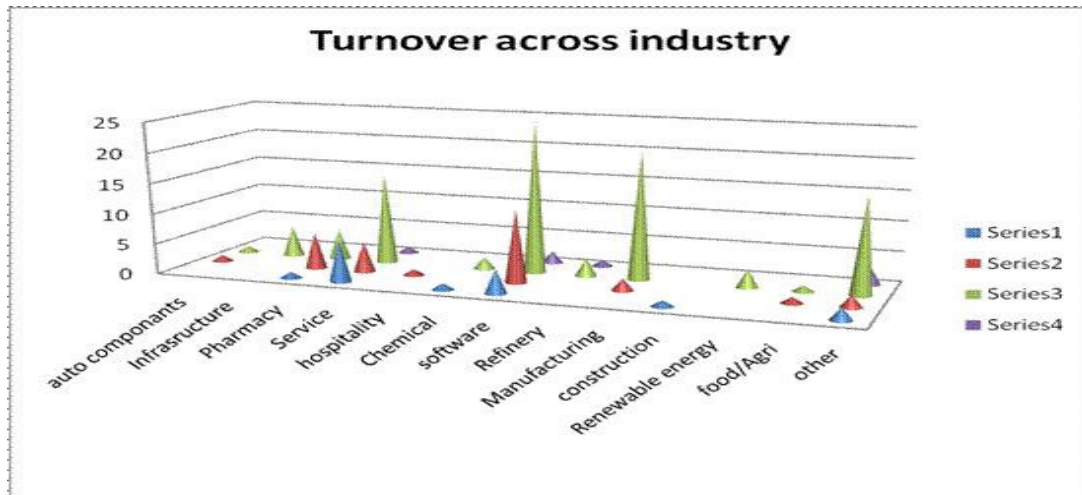


**Table 5: Post of Sustainability Officers and the position they report to:**

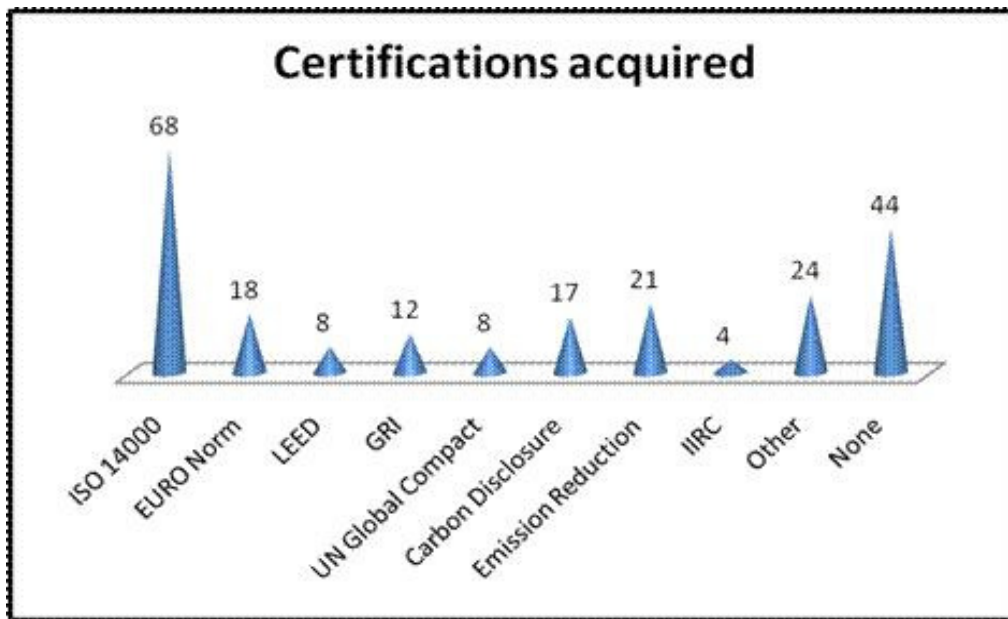




**Table 6: Turnover across industry/sectors**



**Table 7: The sustainability certification acquired by the companies**



# Management of Innovative Technologies: an Integrated Strategic View and its Managerial Implications

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## ABSTRACT

Technology Management (TM) links engineering, science, and management disciplines to plan, to develop, and to implement technological capabilities to shape and accomplish the strategic and operational goals of an organization. Firms are increasingly paying attention to the value implications of technology. This renewed interest in technology is triggered by two principal reasons. *First*, and perhaps the most obvious, technology has been in the forefront of change during the last several decades, bringing new products, transforming our way of life, and changing the rules of the marketplace. A *second*, perhaps less obvious, reason is the fact that technology accounts for a large share of the productivity gains during this century. The twin facts—the role of technology in the development of new products and processes, and its contribution to productivity enhancement—have not gone unnoticed by firms. In the wake of the information technology revolution and the advent of the Internet, there is currently a growing optimism that quantum leaps in productivity are possible by the effective TM. Technology and innovation are value drivers and management decisions should be anchored in the fundamental objective of creating competitive advantage. The advantage may come from innovation and imitation and will depend on both market factors and firm's resources. An open system view of TM and innovation tends to be 'strategic' as it underscores the role of environment in managerial decisions. In this context, the three environmental trends that need to be emphasized are:

(i) *globalization*, (ii) *time compression*, and (iii) *technology integration*. General Managers need to be trained to view and emphasize the 'big picture' as against the details of the specific approaches to TM. TM shall remain suboptimal as long as it doesn't underscore and accommodate the importance of organizational learning—through scanning, by doing, reflecting, and analyzing—as a critical process. While concepts and theory are important, there has to be a bootstrapping between theory and practice of technology management. TM focuses on the principles of strategy and organization involved in technology choices, guided by the purpose of creating *value* for investors. An attempt is made in this conceptual Paper to craft and present an integrated strategic view of technology and its management.

## INTRODUCTION

Technology Management (TM) lies at the heart of all firms, be they high technology or not; therefore, it is generically applicable to the management of firms. Although in the TM area, the success of high-tech firms get a lot of media attention, technology has played and will continue to play a major role in the success of other

firms, even service industries. However, there is an urgent need to interface technology and market factors in major decisions related to TM through a technology market matrix as a way of capturing the major factors involved in critical decision-making. Firms need to realize that the goal of TM is to create *value*, and appreciate the role played by competitive and customer-related factors in



the creation of value through TM. Technology has to be viewed as the leading edge of globalization ever since we entered the 21<sup>st</sup> Century. Similarly, there is a need to view both competitive and collaborative approaches as potential avenues to value creation. Under appropriate conditions, firms may collaborate profitably with their own competitors.

One of the keys to competitive advantage of successful companies is *'organizational speed'* or *'fast cycle capability'* in new product introduction or responding to customers. Speed shall remain the crux of the problem-solving process in TM and technology managers should build and develop a *culture of urgency* within firms. Almost all technology decisions present make-or-buy choices and in fact, it is an avenue to speedy execution. The conventional culture of considering in-house development of technology as superior and not explicitly exploring the option of acquiring it from outside would tantamount to ignoring acquisitions as a viable alternative for value creation. By taking a systemic view, one would be in a position to view the various activities in TM—appropriation of technology, deployment in new products as well as in value chains—as *interlinked*. An open system view also makes TM an integral element of all the activities that have the potential to create value for a firm. Similarly, the process of organizational learning has to be made fundamental to TM as it is critical for long-term success. Gathering of „intelligence“ from outside, imitation of competitors, learning by doing, and problem solving are some of the many ways in which learning can come about. Finally, high technology requires high touch. While learning is a human process, knowledge is a human product. To be effective, high technology requires significant attention to human beings within a corporation and to the role played by learning processes in TM.

Technology is not a substitute for labor and to be effective, individuals in organizations must perform higher level cognitive functions and human side of enterprise.

## **MANAGERIAL IMPLICATIONS OF THE MAJOR THEMES OF TECHNOLOGY MANAGEMENT**

**A. Technological Environment:** First, technological environment is dynamic and needs to be tracked on an ongoing basis. From an open-systems perspective, management of organizations, including technology, should be predicated on the environment facing organizations. Second, tracking technological changes in the environment requires managers to penetrate the organizations and networks that conduct and facilitate technology development. Last, the three visible trends one is able to discern from the environment viz., globalization, time compression, and technology integration require managers to adopt a global perspective, enhance organizational speed of response, and work with other organizations to adapt to technological changes as well as to fully exploit the potential of new technology. Globalization refers to the process by which the various nations in the world are increasingly been interconnected politically and economically through international trade. Its four aspects viz., (i) the resources allocated to technology development, (ii) the location of manufacturing facilities, (iii) the role of multinational corporations, and (iv) the differing comparative advantage of nations in technology development have significant consequences for the technological environment. The second major development in it is “time compression”, which refers to the rapid decrease in time between critical events in technology development and commercialization. It is reflected in the newly emerging source of competitive advantage of firms—speed; that is the ability to learn, adapt, and innovate at increasingly

faster rates. In recent years, there has been growing awareness of the potential inherent in technology integration. It can take place in two ways: combining technologies to (i) develop new products; and (ii) commercialize a product. By combining core technologies, a large number of applications—that are useful to a group of customers—can emerge.

There are three levels of environment: task, competitive/industry, and macro environment. The last one consists of four major segments viz., social, economic, political/regulatory, and technological. Technological environment is defined as institutions linked to technology development activities and its scope is truly global. As a result of globalization, technological developments occur all over the globe. Time compression is manifest in shortened product life cycles, development cycles, and payback periods. The potential inherent in technology integration for new products as well as commercialization is increasingly apparent. Significant managerial implications flow from a study and analysis of this element of TM. Some of them are as follows:

**A.1 Process of Technology Change: The Practicality of Innovation:** Innovation is both a *process* and an *output* of a firm's attempt to find a solution to customers' needs or a technical opportunity. The idea that effective TM involves both finding innovative solutions to problems and opportunities and gaining acceptance for them in the market place is captured by the term co-evolution of market and technology that gets represented in the form of a technology-market matrix. There are different drivers, processes, and outputs of innovation at the firm's level. The drivers of innovation are usually environmental conditions or autonomous, value-seeking behavior of firms. The dynamics of technological change at the firm level generally has a four-stage model of problem

solving. The first involves recognition of a problem triggered by market need, technological opportunity, or a change mandated by regulatory bodies or external agents. In the second, the firm formulates an idea to solve the problem. The third involves bringing the idea into fruition in the form of a prototype or blueprint. The final stage involves commercialization of products or implementation of value chain reconfiguration. There are two dimensions along which one can classify an innovation output: the degree of novelty in component knowledge and the degree of novelty in the configuration of components. Based on them, we have incremental, modular, architectural, and radical types of innovation and they differ in terms of their economic impact, the innovation process, and the role of the manager in it. Organization structure (formalization and centralization), resources, openness to external information, and the structure of informal communication within the firm influence the innovativeness of a firm. However, for the sake of emphasis, we can reiterate three key themes. Development of problem solutions can be accomplished either in-house, in collaboration with others, or simply by adopting innovations from outside while keeping the mode of development as a deliberate management choice. Learning through environmental intelligence, innovation, and imitation are central to effective problem solving. The major we are witnessing in the environment are heightening the need for faster and more effective problem solving than in the past. Successful TM requires that the problem solving within the firm should take into account both technical and market considerations. Thus, both technology-push and market-pull innovations can succeed if they are augmented by market and technical considerations respectively.

## **A.2 Process of Technology Change: The Diffusion from a Practical Point of view:**

When a new product, process, or idea first appears, different consumers adopt it at different time periods. Three major factors determine the speed of diffusion: attributes of innovation, community effects, and characteristics of the population while five attributes of innovation influence the process of adoption: relative advantage, compatibility, complexity, trialability, and observability.

The process is captured by the S-curve of diffusion very much like the case of innovation, with four major eras: emergence, rapid growth, the slow growth, and maturity.

From a practical point of view, managers of TM involved in new product or process introduction should create market feedback mechanisms for product design and market strategy formulation. They should not only be careful about implementation of innovation during its adoption, they should also counter and overcome resistance at the marketplace effectively. As the value of technology is ultimately determined in the market, anyone involved in TM should have a thorough grasp of the diffusion process, and at least four major practical implications flow from this to the managers. Significant attention should be devoted to obtaining market feedback over the course of diffusion in the case of new product or process introductions. The characteristics of the adopters change over time; they reinvent the adoption; and their attitudes toward the innovation are likely to be different. Even after a new product is introduced, firms may have to fine-tune the design and delivery of the product over the various stages of diffusion. In the case of firms adopting innovation, implementation is a challenging task, and should be managed carefully. This process is likely to be incremental, and in many cases, organizations should be

allowed to reinvent the innovation to suit local needs. In addition, because users of innovation are likely to be different from decision-makers, sufficient training and incentives should be provided to smooth out the disruption of adoption. Product design and marketing strategy should reinforce each other as a firm rolls out a new product or process. Coordination mechanisms should be created to foster dialogue between product designers and marketing strategies. They should expect resistance from entrenched players that they may retard the diffusion of new technologies. In order to overcome this resistance, managers should recruit the support of powerful sponsors.

**A.3 Influence of Environmental Trends on Competition:** Major trends in technological environment such as globalization, time compression, and technology integration are redefining the competitive landscape. The scope of competition is increasingly global—a fact that has profound implications for the battles being waged in many competitive domains. Globalization has introduced significant complexity and, in its wake, uncertainty and turbulence to the competitive domains. Problem solving, learning, and competitive responses by firms similarly are therefore forced to be more rapid than was the case earlier. Likewise, different phases in technology evolution open up possibilities for technology integration, both process and product. Technology integration potential at the product level continues well after the formulation of an industry enabling the firms to enhance product features and create differentiation. Several implications for at least four key managerial actions viz., (i) competitive strategy, (ii) investment in innovation, (iii) learning, and (iv) internal operations—flow directly from this analysis.

**Competitive strategy:** As the characteristics of competitive domains shift over time, firms will have to alter the course

of their competitive thrusts. For example, during technology emergence TM executives need to play out competition in product design and in arenas such technological communities. However, during the incremental innovation era, they have to shift the focus to the marketplace and increasingly to process innovation.

Firms that are insensitive to these shifts may discover that their competitive positions are eroded by rivals' actions.

**Investment in Innovation:** Problem recognition stage of technology change involves decision-making to proceed with technology choice and solution development. The decisions require careful weighing of the potential for the value creation. The characteristics of competitive domains provide a set of five questions to help make the decision: (i) Where is the technological opportunity? (ii) Once developed, will we be able to appropriate value from the innovation and, if so, how?

(iii) Can we access collateral assets needed to extract value from our technical change efforts? (iv) How and in which institutional milieu—technological communities—should we compete in addition to the marketplace? (v) How fast should we execute?

**Learning:** Firms will have to orchestrate rapid learning about technological communities, resource endowments, and competitors during the technology emergence phase.

**Internal Operations:** A key implication is that competitive domains demand certain speed of execution and managers will have to build the requisite organizational capabilities for rapid response in many competitive domains.

**B. Managerial implications of Process Innovation and Value Chains:** Over the years, we have witnessed at least four modes of value chain configurations viz., craft production, mass production, lean

production, and mass customization. These four stages differ in terms of the linkage between a firm and its market, product-process linkage, the relative mix of labor and capital content in the operations, the mix of software and hardware technology, and the nature of the social system in the workplace. As we move to mass customization, the firm is tightly linked to customers and becomes technologically more sensitive, and the system shifts from individual to team organization. Value chain configurations, internal organization, and HR practices can be transformed by process innovations. These changes enable a firm to add product features, reduce cost, compete on the basis of speed and customer responsiveness, and, in many cases, retain employees with the promise of flexibility and opportunities for learning. At least three managerial implications are worthy of making a specific mention about.

**Choice of value chain configurations:** Different configurations are appropriate for different competitive domains and strategic purposes. Increasingly, technology-augmented craft production is restricted to valued-added services, such as architecture. Mass production continues to be relevant for low-cost production in low price segments of the mass markets and lean production when cost reductions from software-dominant technologies are used as a competitive weapon. Finally, mass customization is required when competition is on the basis of niche markets and low costs. In competitive domains, where speed is necessary for survival, managers should be on the lookout process innovations on a continuous basis.

**Change in organizational characteristics:** Changes in value chain configuration necessitate changes in organizational structure and process. For the full value impact of reconfigurations, a total organizational plan must be drawn up and implemented requiring redesign of

structure and process and HR alignment through the selection of appropriate managers and employees with requisite skills.

**Flexible Workplace:** The changing demographics and lifestyles of employees are increasingly necessitating flexible work arrangements enabled by technology. Managers must be on the lookout for process innovations to provide a more flexible workplace.

That makes it a source of retaining scarce talent in many industries leading to a competitive advantage.

### C. Managerial Implications of having a Technology Strategy

**C.1 Pragmatic and managerial-oriented Technology Intelligence:** Technology intelligence a critical input into all major strategic decisions and is primarily pragmatic and managerial in orientation. Managers involved in such decisions should insist that they have the very best technology intelligence in their technology choices that underpin major decisions.

It also requires tapping a mix of secondary and primary data sources and maintaining access to the latter and having a network of personal contacts outside the firm are critical to the flow of timely technology information to the firm. Managers, in turn, should employ systematic approaches to incorporating technology-oriented information into action alternatives. The systematic approaches should enable them to assess the consequences of technological trends, as well as the consequence of their technology choices.

**C-2 Framework for Formulating a Technology Strategy:** Technology strategy is the revealed pattern in the technology choices of firms. The choices involve the commitment of resources for the appropriation, maintenance, deployment,

and abandonment of technological capabilities. They determine the character and extent of the firms' principal technical capabilities and the set of available product and process platforms. There are four major types of technology strategies: technology leadership, niche, technology and rationalize. During the era of technology emergence, there are numerous opportunities for technology leadership; however, during incremental change era, the same leadership requires dominance in both technology and markets. Niche is preferred when the firm is competitively positioned, but not dominant. When the technological positions are weak, the firms may be forced to adopt followership or rationalization. A firm makes technology choices in three major domains: appropriation that determines its technological capabilities, deployment in products that determines its product platform, and deployment in value chains that determines its process platforms. These decisions may create fundamentally new businesses, alter the rules of rivalry in other competitive domains, or support the current business strategies. The connection between technology and business change with time as competitive domains evolve and firms change their business strategies.

**C-3 Collaborative Mode as a Technology Strategy:** In recent years, there has been a growth in R & D partnerships, marketing alliances, outsourcing, and alliances between small and large firms. Of course, there are at least three compelling reasons for choosing collaborative mode of implementation of technology strategy. Sharing of risks, pooling of resources, and leveraging of individual firm's capabilities are three such overriding factors. However, both strategic objectives such as controlling the competitive domain, knowledge transfer and acquisition, and maintaining institutional links to technology environment and operating objectives like competitive

benchmarking, capturing operating efficiencies and value from development, and time to market generally propel a firm to undertake collaborative arrangements. Collaborative arrangements are visible in the appropriation of technology, its deployment in new products and value chains, and its marketing. Cooperative research and strategic alliances are the usual forms of arrangements in technology appropriation. Inward technology alliances and joint product development are common in new product development. Outsourcing is increasingly common in value chain activities. Licensing is a major way by which firms extract value from technology developed in-house. All these arrangements involve three types of risk: loss of intellectual property, competitive risk, and organizational risk and are present in all the three domains of such arrangements viz., appropriation, deployment, and marketing. Managerially, these different forms are appropriate under different technology and market conditions. When the technology and market are familiar to the firms, internal development is encouraged and when either one is new or unfamiliar, joint venture or acquisition is an alternative. When neither the technology nor the market is familiar, acquisition, venture capital, or educational acquisitions are needed.

The execution of collaborative arrangement, however, requires specification of clear objectives, top management commitment, and clear and open communications.

#### **D. The managerial implications of Technology Appropriation as one of the domains of Technology Strategy**

Technology Appropriation (TA) serves three basic purposes viz., (i) to create fundamentally new businesses, (ii) to alter the rules of rivalry in existing competitive domains, or (iii) to support existing businesses. Over the years, firms

have been moving toward the third generation principles that not only emphasize bringing TA into close linkage with business strategy formulation but also view TA projects as a portfolio, interrelated among themselves and with business objectives. It would be better to highlight at least four major points to be considered by managers in TA projects. They should be decided only by juxtaposing technological possibilities and business considerations implying there by that technology and business managers should be involved in their selection. All three purposes of TA i.e., (i) creation of fundamentally new business, (ii) altering the rules of rivalry, and (iii) supporting the existing businesses, should be explicitly evaluated. TA should focus on the portfolio of projects, not merely on each project to keep a focus on resources to gain the best value for the firm from its TA activities.

#### **E. The implications of Organizing for Innovation for General Management**

The decisions related to the (i) technology strategy and (ii) the choice of organizational mechanisms for innovation usually come under the domain of general management that exercises leadership by building a culture of learning. Thus, their task of successfully implementing the organizational mechanisms extends beyond the decisions mentioned before. It includes, broadly, four additional tasks: (i) definition of purpose, (ii) choice of leadership, (iii) managing transition, and (iv) resource allocation. Any such mechanism should be sustained by a clear definition of purpose as any firm has many alternatives to choose from at any given point in time. This makes the factions within the firm to coalesce around their preferred alternative. However such mechanism can succeed only if they are sustained by a clear purpose. It is the collective responsibility of the general management to maintain the clarity of objectives behind the choice of specific

organizational mechanism. One of the fundamental ways in which the general management of an organization expresses its will is through the selection of individuals to head the organizational mechanism for innovation whether it is the R&D department, a project team, or a central research laboratory. In the domain of TM, the individual selected for a leadership position should fulfill three conditions viz., the individual should (i) be able to deal with business as well as with technology-related issues, (ii) have a stellar technical reputation so that he/she is credible to his/her subordinates, and (3) have sufficient political acumen so that he/she can be credible among the general management so as to obtain sufficient funds to carry out important projects. Organizational mechanisms are likely to change over time as the corporate strategies and the markets change. The general management role extends to managing the transition between one type of organizational form to another. Successful transitions do not occur overnight and require patience for successful implantation. It is important that general managers support the transitions through communication as well as their own behavior. Any organizational mechanism will succeed only to the extent that requisite resources are made available: people, time, and money. It is the general management's responsibility to ensure that sufficient resources flow to the organizational mechanisms.

### CONCLUDING COMMENTS

In many ways, Technology Management (TM) is not a new field and its beginnings can be traced to the 1950s, when R&D management ideas were developed. During 1960s and 1970s, there was interest in understanding innovation. As we entered the last quarter of the twentieth century, the impact of global competition was keenly felt. Consequently, there was renewed attention to technology. A modest

attempt has been made in this Paper to very briefly present the current renditions of TM to reflect the altered views on technology in the light of the new realities. A pervasive theme in this Paper is globalization of business, in general, and technology in particular and in the process it also emphasizes the need to interface technology and market factors in major decisions related to TM. The goal of TM is to create value and competitive and customer-related factors play a major role in the creation of value and one has to capture the major factors involved in critical decision-making through techniques like technology market matrix. To sum up, the paper is aimed at bringing out the **managerial implications** of (i) developing the concept of technology environment and to highlight the major trends that are shaping it, (ii) to discuss the process of technology change—innovation and diffusion, (iii) the impact of technology change on industries and competition as well as on value chains and internal organizational characteristics, (iv) the strategic aspects of TM in terms of technological intelligence, technology strategy, and currently popular collaborative arrangements, and (v) appropriation and deployment of technology. Towards the end, the role of general management as an agent of continual technological change in an organizational setting is discussed.

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# A Survey on Impact of Celebrities towards Advertisements

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## ABSTRACT

The topic is named as "A SURVEY ON IMPACT OF CELEBRITIES TOWARDS AD'S". This topic is going to be done under the ads industry. The main aim of this project is to know whether we need the presence of celebrities in the ad's to make it success. For this project survey is going to be taken from the public (i.e.) people is going to give their opinion. This will be helpful to know about the people's mindset and expectation from the ads, how people are watching ads, etc. With the help of this we can generate new ideas to make the ads to be useful for the people and to know whether we need the presence of celebrities in ads. Normally many ads in the yester years were very successful (celebrity as well as non-celebrity ads). In ads celebrities from many fields like cinema, sports, etc. are appearing. They have good reach towards people. Many people are following that celebrities style in their own life. By keeping that in mind many brand owners and advertisers thought that the ad's will have a good reach towards public and also brand will be successful if we use celebrity in their ads (cannot be successful without those celebrities). But many forgot to notice that many ads were successful without the presence of celebrities in it. Now it has become a trend that celebrities are compulsorily needed for ads. Some questions in many people mind are:

Is it necessary to have celebrities in ads to make it success?

Ads are success only because of the presence of celebrities in it?

People prefer only celebrity ads?

With the help of this project we can get the answers for the above questions. Each and every ad is prepared by keeping some group of people in mind. Also main aim of the ads is to make the people to be aware about a brand. With the help of this project we can come to know whether the people expect the presence of celebrities in the ads and to decide whether we want to use celebrities in the future ads and also this project will be helpful for us to know in which way we can make the ads to be useful for the people.

## INRODUCTION

Celebrities, who are known to shape destinies, cast an enormous influence. No, we are not talking about astrology here. We are referring to the powerful effect of celebrities on destinies of brands. One approving nod from a famous face can translate into millions in brand sales.

Perhaps that's why the world over companies has been using celebrities to endorse everything, from food to food chains, from soft and hard drinks to health drinks, from clothes and accessories to cars

(and the tyres on which they run). In today's world, the use of celebrity in ads has become a trend and a perceived winning formula of corporate image building and product marketing. This phenomenon is reflected by the recent market research findings that 8 out of 10 TV commercials scoring the highest recall are those with celebrities appearances. The reason behind the popularity of celebrity ads is the advertisers belief that brand images built through celebrities achieve a higher degree of attention and recall for consumers, which will eventually lead to higher sales. Although

the potential benefits of using celebrity ads to promote brand images and products are significant, so are the costs and risks. The inherent upside of attaching a celebrity to a brand is that the brand literally has a face, name and personality that immediately project an image of a living, breathing, credible person as opposed to a faceless corporate entity. The downside is that individuals are not as stable or as easily controllable as corporate entities. As fame comes and goes, so goes the brand. In today's world everyone thinks that celebrities are enough for the ads. If there is the presence of celebrities means then we can make the ads success. There are many ads which were successful without the help of celebrities. (e.g.) Vodaphone zoo-zoo ads. This project will be helpful in knowing about whether we need celebrities in the ads and also to know whether people expect them in the ads.

#### **LIST OF SOME OF INDIAN CELEBRITIES AND THE BRAND NAME IN WHICH THEY ARE USED**

##### **MALE**

Vijay	- Josalukas
Surya	- Sunrise coffee
Madhavan	- Joyakulas
Vikram	- 3 roses
Sivakarhikeyan	- Poorvika mobiles
Karhi	- Bru
Amirkhan	- Samsung mobile
Amithab Bachan	- Yippee Noodles
Viratkholi	- clean and clear shampoo
Sachin Tendulkar	- Boost

##### **FEMALE**

Aishwaryarai	- Loreal
Asin	- Miranda
Trisha	- Vivel

Sneha	- Saravana stores
Anushka	- Chennai silks (tirunelveli)
Simran	- Fanta
Jothika	- comfort
Kareena kapoor	- Mahindra rodeo
Shruthi Hassan	- Jewel one
Sainanewhal	- Topramen

#### **OBJECTIVES**

##### **PRIMARY OBJECTIVE:**

To analyze about the impact of celebrities towards advertisements.

##### **SECONDARY OBJECTIVE:**

To know about the different types of audience and their mindset about the advertisements

To know whether celebrities are compulsorily needed and their importance in advertisements

To know celebrity from which field is mostly used in advertisements

To know whether celebrities are the only reason for the success of the advertisements

and also to know whether we can make the advertisements success without celebrities presence in it.

To know which type of audience is expecting celebrities presence in the advertisement and in which way they expect and also to know whether audience expect more celebrities advertisements in future.

To know whether one celebrity is present in more than one brand advertisement and also one brand advertisement has more than one celebrity in it

## NEED AND SCOPE

### NEED:

To find about the reach of the celebrities towards different types of people.

To find celebrity from which field is appearing in more ads and knowing which type of celebrity is given more importance by the people for ads appearance.

To find whether people are also watching ads without celebrity and will be helpful to know whether the ads will be successful without celebrities presence.

To find whether we can include more number of celebrities ads in the upcoming years if the audience need their presence.

### SCOPE

It will be helpful for knowing about the people's expectation from ads and their mindset about ads.

It will be helpful for knowing which type of ads is regularly watched by the people

It will be helpful for knowing whether people are expecting the presence of celebrities in the ads and if so which type of people is expecting.

It will be helpful for knowing whether people are watching ads without celebrities and what make them to watch ads.

It will be helpful for knowing whether we want to use celebrities in the future ads, if no it will be helpful to reduce ad cost and new faces will be given chance and creativity will be more in future.

Does not have any limitation and so it can be telecasted in any place

## LITERATURE REVIEW

**David H. Silvera and Benedikte Austad, (University of Tromso, Tromso, Norway):** According to this research it examines whether consumers infer that celebrity endorsers like the products they

endorse, and presents a model using these inferences and other characteristics of the endorser to predict attitudes toward the endorsed product. Participants in two experiments examined written endorsement advertisements and were asked to infer the extent to which the endorser truly liked the advertised product and to rate the endorser's attractiveness, similarity to themselves, and knowledge of the product. Attitudes toward the advertisement, the endorser and the product were also measured. The resulting model indicated that product attitudes were predicted by inferences about the endorser's liking for the product and by attitudes toward the endorser.

### **Muruganantham.G, Kaliyamoorthy**

**.S (February 2010):** According to this study one of the biggest challenges in marketing communications is how to break through ever increasing media clutter. With media becoming fragmented, engaging the customer has become difficult. Celebrity endorsements can help to meet this challenge due to the characteristics they offer. India is becoming a celebrity-obsessed society due to increase in celebrity advertisements in various media. The purpose of this paper is to study the positioning strategies of two leading fairness cream brands and to assess the role played by celebrities to position the brand in the minds of the target segment. The results show that users and non-users of the study brands perceive the brand positioning meaning differently. Conclusions and recommendations are presented for those involved in personal care brand development and marketing research.

### **Ding, Haina, Molchanov, Alexander, Stork, Philip (June 2011):**

According to this study we are put up in the situation to know whether celebrity endorsements are worthwhile for investments in advertising? To answer this question, we analyze a unique sample of

101 announcements made between 1996 and 2008 by firms listed in the USA. Internet is the main medium of communication for these announcements. We employ event study methodology and document statistically insignificant abnormal returns around the announcement dates. As a result, we find that endorsements of technology industry products coincide with significant positive abnormal returns around the announcement dates. Finally, we find weak support for the match-up hypothesis between celebrities and endorsed products.

**Choi, Sejung Marina, Rifon, Nora.J (April 2007):** According to this study mass media inundate audiences with celebrity images. From sports stars to film stars, musical artists and entertainers, audiences feel that they personally know these famous personalities and often develop an "illusion of intimacy" with them

**Darin W. White, Lucretia Goddard and Nick Wilbur, (McAfee School of Business Administration, Union University, Jackson, Tennessee), 2009:**

According to this study the purpose of this paper is to test empirically the impact of negative information about a celebrity spokesperson on consumers' perceptions of the endorsed brand. In addition, it is the first study to examine the reverse relationship: the impact of negative information about the brand on the celebrity endorser.

**Lear, Karen E.; Runyan, Rodney C.; Whitaker, William H, 2009:** According to this study the purpose of this paper is to extend previous research into sport celebrity endorsements by investigating such endorsements of products ultimately sold by retailers. This is done by updating previous research involving print media in sporting magazines.

**Hsu C-k.; McDonald D, 2002:** According to this study celebrity endorsement advertising is a prevailing advertising technique. Some marketers

choose to utilize multiple celebrities to promote their products or brands. Nevertheless, it is surprising that so little research has focused on this phenomenon. This research discussed advantages and potential concerns of multi-celebrity endorsement advertising and documented the actual use of multiple celebrity endorsers in the milk mustache campaign in the USA. Overall, we found that these milk mustache ads have matched their celebrities gender, age and type of milk attributes in appealing to their female/male, teen/adult consumers. The results support that fit between the endorsed product and various celebrities is a key factor for using multiple celebrity endorsers in advertising.

**Akturan, Ulun, 2011:** According to this study we are in situation to know about celebrity advertising in the case of negative associations. In total, 451 posts were captured permanently from randomly selected weblogs, and analyzed by discourse analysis. The basic emerging themes therein have been isolated and interpreted, and a model of celebrity endorsement in the case of negative information has been developed. The present study examined only one case of celebrity advertising.

**Byrne, Angela; Whitehead, Maureen; Breen, Steven, 2003:** According to this study, the case study examines the use of celebrity endorsement in the formation of the retail image of leading European grocery distribution group J. Sainsbury, in particular, the process of transference of celebrity images to the product's image. The incorporation of Jamie Oliver (well known as television celebrity The Naked Chef) into the promotions of one of Britain's leading grocery chains involves a high profile campaign that has been adopted in order to imbue the company's products with an image of quality. The success of the campaign has been replicated in New Zealand by another

grocery retail “giant”, Foodstuffs, who have also adopted The Naked Chef to endorse their products. The case draws on field research with consumers and key informant interviews with advertising agency personnel who identified the criterion for the choice of Jamie Oliver. The extent to which the market place recognizes and consumers associate themselves with the image Jamie projects as a celebrity endorser for J. Sainsbury is explored.

**Chan, Kara; McNeal, James U.; Chan, Fanny, 2003:** According to this study, it examines how much attention urban mainland Chinese children pay to television commercials, their response to different types of commercials, and their perceptions of the quality of advertised and non-advertised brands.

#### RESEARCH METHODOLOGY

Type of Study	Descriptive Study
Source of Data	Primary and Secondary
Sample Size	200
Research Tools	Percentage Analysis, , Chi-Square Method ,ANOVA
Research Approach	Survey
Sampling Procedure	Convenient Sampling
Research Instrument	Questionnaire
Place of Study	Chennai, Thanjavur, Hyderabad, Bangalore

#### LIMITATIONS OF THE STUDY

Time was the major constraint as it is very limited.

The respondents were unable to spend much time for filling the questionnaire so there are chances for bias on the respondents side.

The respondents attitude may change in future due to changes in the technology and its influence on the day to day life.

The importance of the sources might change based on the situations and requirement.

Some respondents were hesitant to answer as they don't watch advertisements.

#### PERCENTAGE ANALYSIS

##### Respondents opinion regarding watching advertisement regularly.

Table 1 shows that 9% are watching print, 67% are watching visual, 16% are watching online advertisements and 8% are watching other advertisements such as sms ads, banner ads, etc regularly.

##### Respondents expectation regarding information from the advertisement

Table 2 shows that 43% expect brand usage, 20% expect brand availability, 27% expect brand price and 10% expect all the details of the brand from advertisements.

##### Various field and celebrities in the advertisements

Table 3 shows that 21% have seen movie, 18% have seen sports, 59% have seen both movie and sports and 2% from have seen from other fields such as music, dance, etc celebrities in the advertisements.

##### Respondents expectation from the advertisements if it is a celebrity advertisement

Table 4 shows that 35% expect good concept, 32% expect brand details, 23% expect message and other than this 10% expect celebrities style with brand details if it is a celebrity advertisement.

### **Respondents expectation from the advertisements if it is a non-celebrity advertisement**

Table 5 shows that 35% expect good concept, 40% expect brand details, 19% expect message and other than this 6% expect fictional characters if it is a non-celebrity advertisement.

### **Respondents opinion regarding type of advertisements if it is a non-celebrity advertisement.**

Table 6 shows that people feel that 17% print, 70% visual, 7% prefer online advertisements and 6% prefer other advertisements such as sms ads, banner ads, etc will be helpful to reach the audience if it is a non-celebrity advertisement.

### **Respondents opinion regarding whether celebrities are enough for the success of advertisements**

Table 7 shows that 15% strongly agree, 30% agree, 17% neither agree nor disagree, 21% disagree, 17% strongly disagree that celebrities are enough for success of advertisements.

### **Respondents opinion regarding difficult to watch advertisements without celebrities**

Table 8 shows that 8% strongly agree, 19% agree, 15% neither agree nor disagree, 36% disagree, 22% strongly disagree that it is difficult to watch advertisements without celebrities.

### **Respondents' opinion regarding celebrities and success of the advertisements**

Table 9 shows that 19% strongly agree, 23% agree, 23% neither agree nor disagree, 20% disagree, 15% strongly disagree that celebrities will always be helpful for the success of the advertisements.

### **Respondents opinion regarding one celebrity in more than one brand's advertisement**

Table 10 shows that 42% strongly agree, 39% agree, 8% neither agree nor disagree, 9% disagree, 2% strongly disagree that they have seen one celebrity in more than one brand's advertisement.

### **Respondents' opinion regarding one brand with more celebrity**

Table 11 shows that 39% strongly agree, 40% agree, 12% neither agree nor disagree, 7% disagree, 2% strongly disagree that they have seen one brand with more celebrity.

### **Respondents' opinion regarding good concept and absence of celebrity**

Table 12 shows that 48% strongly agree, 32% agree, 11% neither agree nor disagree, 7% disagree, 2% strongly disagree that advertisements will have high reach if it has good concept and absence of celebrity.

### **Preference of advertisement only with celebrities**

Table 13 shows that 22% are preferring celebrity advertisements and 78% are not preferring celebrity advertisement.

### **Respondents' opinion regarding favorite celebrities in the advertisements**

Table 14 shows that 87% have seen and 13% have not seen their favorite celebrities in the advertisements.

### **Respondents' opinion regarding advertisements only for presence of celebrities**

Table 15 shows that 24% are watching and 76% are not watching advertisements only for presence of celebrities.

### **Respondents' opinion regarding advertisements without celebrities**

Table 16 shows that 78% are ready to watch and 22% are not ready to watch advertisements without celebrities.

### **Respondents' opinion regarding watching all types of advertisements**

Table 17 shows that 78% are watching and 22% are not watching all types of advertisements.

### **Respondents' expectation about more celebrities to appear in the advertisements in future**

Table 18 shows that 46% are expecting and 54% are not expecting any more celebrities to appear in the future advertisements.

### **Chi-Square Analysis**

#### **Find out significant difference between celebrities are enough for success of advertisement and difficult to watch advertisement without celebrities**

**H0:** There is no significant difference between celebrities are enough for success of advertisement and difficult to watch advertisement without celebrities

**H1:** There is significant difference between celebrities are enough for success of advertisement and difficult to watch advertisement without celebrities

Calculated value is lesser than Table 19 value. Hence alternate hypothesis is rejected. So there is no significant difference between celebrities are enough for success of advertisement and difficult to watch advertisement without celebrities

#### **Find out significant difference between expectation of celebrity advertisement and expectation of non-celebrity advertisement**

**H0:** There is no significant difference between expectation of celebrity

advertisement and expectation of non-celebrity advertisement

**H1:** There is significant difference between expectation of celebrity advertisement and expectation of non-celebrity advertisement

Calculated value is lesser than Table 20 value. Hence alternate hypothesis is rejected. So there is significant no difference between expectation of celebrity advertisement and expectation of non-celebrity advertisement

#### **Find out significant difference between prefer only celebrity advertisement and watching advertisement only for celebrities presence**

**H0:** There is no significant difference between prefer only celebrity advertisement and

watching advertisement only for celebrities' presence.

**H1:** There is significant difference between prefer only celebrity advertisement and watching advertisement only for celebrities' presence.

Calculated value is lesser than Table 21 value. Hence alternate hypothesis is rejected. So there is no significant difference between prefer only celebrity advertisement and watching advertisement only for celebrities presence.

#### **Find out significant difference between people are ready to watch advertisement without celebrities and people expect more celebrity to appear in future advertisement**

**H0:** There is no significant difference between people are ready to watch advertisement without celebrities and people expect more celebrity to appear in future advertisement.

**H1:** There is significant difference between people are ready to watch advertisement

without celebrities and people expect more celebrity to appear in future advertisement.

dependent on one brand with more celebrity.

Calculated value is lesser than Table 22 **Find out whether advertisement with value.** Hence null hypothesis is accepted. **good concept and absence of celebrity is**

So there is no significant difference **dependent on information expected from** between people are ready to watch **advertisement**

advertisement without celebrities and **H0: Advertisement with good concept and people expect more celebrity to appear in absence of celebrity is not dependent on information expected from advertisement** future advertisement.

**Find out significant difference between celebrities will be always helpful for the success of advertisement and celebrity advertisement are more effective than non celebrity advertisement**

**H1: Advertisement with good concept and absence of celebrity is dependent on information expected from advertisement**

**H0:** There is no significant difference between celebrities will be always helpful for the success of advertisement and celebrity advertisement are more effective than non celebrity advertisement.

Calculated value is lesser than Table 25 value. Hence null hypothesis is accepted. So advertisement with good concept and absence of celebrity is not dependent on information expected from advertisement

**Find out whether seen your favourite celebrity in advertisement is dependent on field of celebrity appearing in advertisement**

**H1:** There is significant difference between celebrities will be always helpful for the success of advertisement and celebrity advertisement are more effective than non celebrity advertisement.

**H0:** Seen your favourite celebrity in advertisement is not dependent on field of celebrity appearing in advertisement

Calculated value is lesser than Table 23 value. Hence null hypothesis is accepted. So there is no significant difference between celebrities will be always helpful for the success of advertisement and celebrity advertisements are more effective than non celebrity advertisement.

**H1:** Seen your favourite celebrity in advertisement is dependent on field of celebrity appearing in advertisement

**ANOVA:**

Calculated value is lesser than Table 26 value. Hence null hypothesis is accepted. So Seen your favourite celebrity in advertisement is not dependent on field of celebrity appearing in advertisement

**Find out whether one celebrity in more brand is dependent on one brand with more celebrity**

**Find out whether watching all types of advertisements is dependent on type of advertisement watching regularly**

**H0:** One celebrity in more brand is not dependent on one brand with more celebrity

**H0:** Watching all types of advertisements is not dependent on type of advertisement watching regularly

**H1:** One celebrity in more brand is dependent on one brand with more celebrity

**H1:** Watching all types of advertisements is

Calculated value is greater than Table 24 **dependent on type of advertisement** value. Hence alternate hypothesis is **watching regularly** accepted. So one celebrity in more brand is

Calculated value is lesser than Table 27 value. Hence null hypothesis is accepted.





So watching all types of advertisements is not dependent on type of advertisement watching regularly

### FINDINGS

In previous days people used switch over to other works during advertisement time and also people use to turn over the advertisement pages.

Due to the improvement in the technology and needs, people's mindset has been changed and most of the people have started watching advertisements.

People are giving first importance to Television advertisement. Next to that paper, magazine, radio, internet, SMS advertisement, etc are given more importance.

Mostly people aged between 15- 25 are expecting celebrity advertisement as they feel that it is an easy way of conveying the message.

People aged between 25-40 are expecting brand details in the advertisements as it will be easy for them to make a purchase decision.

People aged above 40 years are expecting a good concept with brand details in the advertisement.

Celebrity from fields such as movies and sports are appearing in more number of advertisements.

Also people are having thinking that whether the celebrities are using the brands they are endorsing.

Most of the people feel that brand which is not shining well compared to its rivals in the market need a celebrity to promote it.

As a whole non-celebrity advertisement has been given more importance by the people

Television advertisement has been given first preference in the non- celebrity

advertisement also. Next to that paper, magazine, radio, internet, SMS advertisement, etc are given more importance.

### SUGGESTIONS

Advertisement is mainly used to create awareness towards the people about a particular brand. So first we must try to make the people to first understand the advertisements.

Each and every advertisement needs a good innovation.

Celebrity advertisement has been introduced only before 20 years and also during last 5-7 years only many celebrity advertisement is taking place. Also celebrities are also normal persons like us.

Advantages of celebrity advertisements are:

Time for the reach will be less.

Number of followers will be more

No need for more innovation.

Disadvantages of celebrity advertisements are:

Cost for making will be more

Brand will be a failure one towards opposite fans

Many celebrity will be endorsing more than one brand at a time

Many brand will be having more than one celebrity at a time

### CONCLUSION

From the research it is clearly understood that non- celebrity advertisement is given more importance by the people, as the people are expecting only good concept, brand details and number of repetition from the advertisement. It will be helpful to reduce the advertisement cost in future if we use non- celebrity advertisements. Also we much choose the

correct channel and timing for launching our advertisement and also to make it success.

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**TABLE 1 Respondents opinion regarding watching advertisement regularly.**

OPTIONS	RESPONDENTS	PERCENTAGE
Print	18	9
Visual	134	67
Online	32	16
Others, please Specify	16	8
<b>TOTAL</b>	<b>200</b>	<b>100</b>

**TABLE 2 Respondents expectation regarding information from the advertisement**

OPTIONS	RESPONDENTS	PERCENTAGE
Brand Usage	86	43
Brand Availability	40	20
Brand Price	54	27
Others,Please Specify	20	10
<b>TOTAL</b>	<b>200</b>	<b>100</b>

**TABLE 3 Various field and celebrities in the advertisements**

OPTIONS	RESPONDENTS	PERCENTAGE
Movie	43	21
Sports	36	18
Both	117	59
Others, please specify	4	2
<b>TOTAL</b>	<b>200</b>	<b>100</b>

**TABLE 4 Respondents expectation from the advertisements if it is a celebrity advertisement**

OPTIONS	RESPONDENTS	PERCENTAGE
Good concept	71	35
Brand details	63	32
Message	46	23
Others, please specify	20	10
<b>TOTAL</b>	<b>200</b>	<b>100</b>

**TABLE 5 Respondents expectation from the advertisements if it is a non-celebrity advertisement**

OPTIONS	RESPONDENTS	PERCENTAGE
Good concept	71	35
Brand details	81	40
Message	37	19
Others, please specify	11	6
<b>TOTAL</b>	<b>200</b>	<b>100</b>

**TABLE 6 Respondents opinion regarding type of advertisements if it is a non-celebrity advertisement.**

OPTIONS	RESPONDENTS	PERCENTAGE
Print	34	17
Visual	141	70
Online	13	7
Others, please specify	12	6
<b>TOTAL</b>	<b>200</b>	<b>100</b>

**TABLE 7 Respondents opinion regarding whether celebrities are enough for the success of advertisements**

OPTIONS	RESPONDENTS	PERCENTAGE
Strongly agree	29	15
Agree	61	30
Neither agree nor disagree	34	17
Disagree	43	21
Strongly disagree	33	17
<b>TOTAL</b>	<b>200</b>	<b>100</b>

**TABLE 8 Respondents opinion regarding difficult to watch advertisements without celebrities**

OPTIONS	RESPONDENTS	PERCENTAGE
Strongly agree	17	8
Agree	39	19
Neither agree nor disagree	27	15
Disagree	73	36
Strongly disagree	44	22
<b>TOTAL</b>	<b>200</b>	<b>100</b>

**TABLE 9 Respondents' opinion regarding celebrities and success of the advertisements**

OPTIONS	RESPONDENTS	PERCENTAGE
Strongly agree	38	19
Agree	46	23
Neither agree nor disagree	46	23
Disagree	39	20
Strongly disagree	31	15
<b>TOTAL</b>	<b>200</b>	<b>100</b>

**TABLE 10 Respondents opinion regarding one celebrity in more than one brand's advertisement**

OPTIONS	RESPONDENTS	PERCENTAGE
Strongly agree	84	42
Agree	77	39
Neither agree nor disagree	16	8
Disagree	19	9
Strongly disagree	4	2
<b>TOTAL</b>	<b>200</b>	<b>100</b>

**TABLE 11 Respondents' opinion regarding one brand with more celebrity**

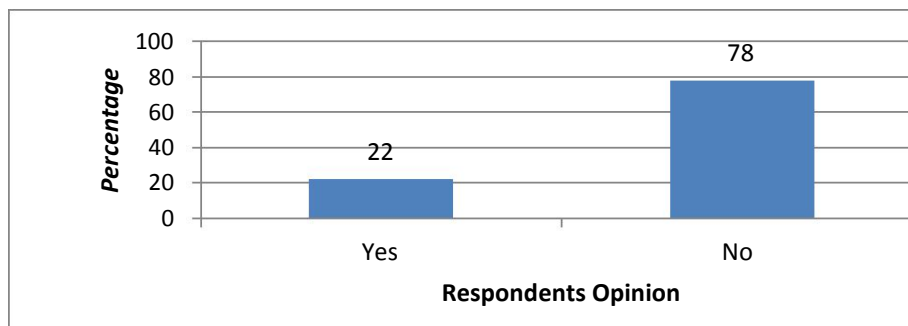
OPTIONS	RESPONDENTS	PERCENTAGE
Strongly agree	78	39
Agree	80	40
Neither agree nor disagree	23	12
Disagree	15	7
Strongly disagree	4	2
<b>TOTAL</b>	<b>200</b>	<b>100</b>

**TABLE 12 Respondents' opinion regarding good concept and absence of celebrity**

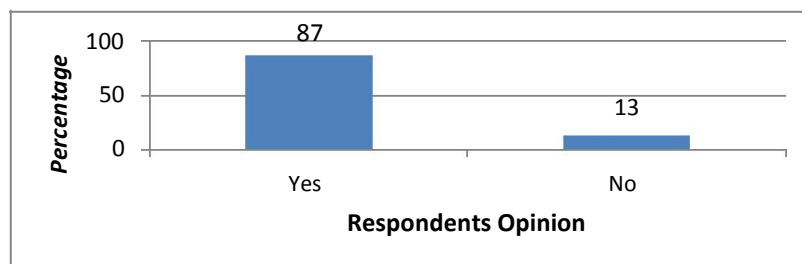
OPTIONS	RESPONDENTS	PERCENTAGE
Strongly agree	96	48
Agree	63	32
Neither agree nor disagree	22	11
Disagree	15	7
Strongly disagree	4	2
<b>TOTAL</b>	<b>200</b>	<b>100</b>

**TABLE 13 Preference of advertisement only with celebrities**

OPTIONS	RESPONDENTS	PERCENTAGE
Yes	45	22
No	155	78
<b>TOTAL</b>	<b>200</b>	<b>100</b>

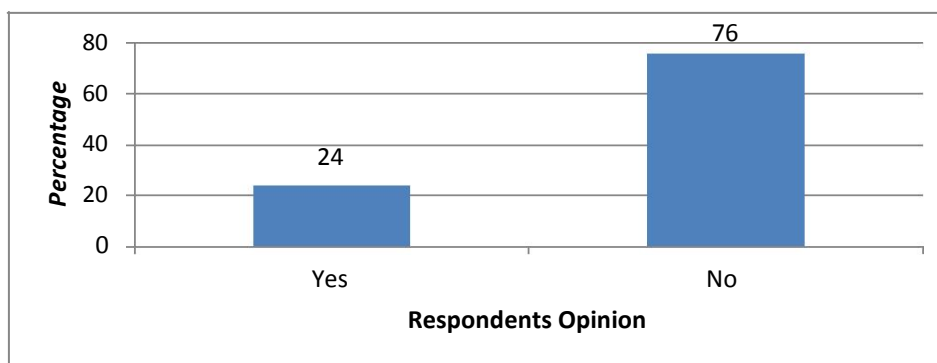
**TABLE 14 Respondents' opinion regarding favorite celebrities in the advertisements**

OPTIONS	RESPONDENTS	PERCENTAGE
Yes	175	87
No	25	13
<b>TOTAL</b>	<b>200</b>	<b>100</b>

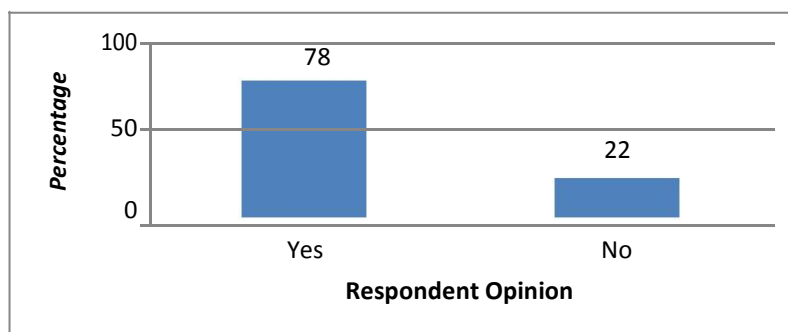


**TABLE 15 Respondents' opinion regarding advertisements only for presence of celebrities**

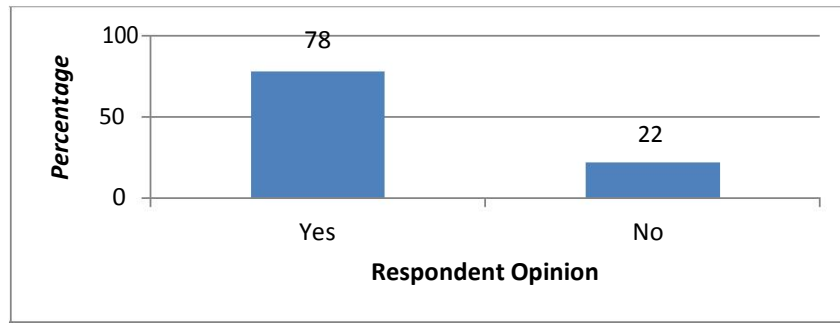
OPTIONS	RESPONDENTS	PERCENTAGE
Yes	48	24
No	152	76
<b>TOTAL</b>	<b>200</b>	<b>100</b>

**TABLE 16 Respondents' opinion regarding advertisements without celebrities**

OPTIONS	RESPONDENTS	PERCENTAGE
Yes	155	78
No	45	22
<b>TOTAL</b>	<b>200</b>	<b>100</b>

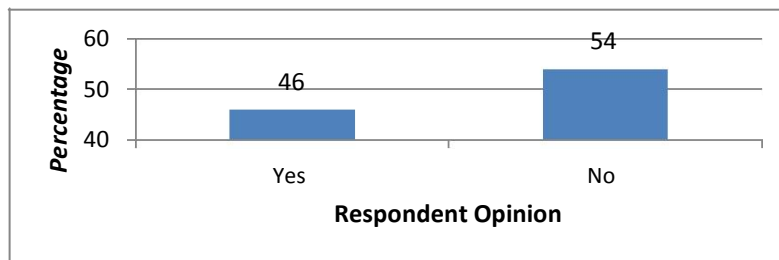
**TABLE 17 Respondents' opinion regarding watching all types of advertisements**

OPTIONS	RESPONDENTS	PERCENTAGE
Yes	157	78
No	43	22
<b>TOTAL</b>	<b>200</b>	<b>100</b>



**TABLE 18 Respondents' expectation about more celebrities to appear in the advertisements in future**

OPTIONS	RESPONDENTS	PERCENTAGE
Yes	92	46
No	108	54
<b>TOTAL</b>	<b>200</b>	<b>100</b>



**TABLE 19 Find out significant difference between celebrities are enough for success of advertisement and difficult to watch advertisement without celebrities**

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	124.638 <sup>a</sup>	16	.000
Likelihood Ratio	112.891	16	.000
Linear-by-Linear Association	50.019	1	.000
<b>No of Valid Cases</b>	<b>200</b>		



**TABLE 20 Find out significant difference between expectation of celebrity advertisement and expectation of non-celebrity advertisement**

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	55.858 <sup>a</sup>	9	.000
Likelihood Ratio	40.240	9	.000
Linear-by-Linear Association	1.733	1	.188
<b>No of Valid Cases</b>	<b>200</b>		

**TABLE 21 Find out significant difference between prefer only celebrity advertisement and watching advertisement only for celebrities presence**

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	268.892 <sup>a</sup>	4	.000
Likelihood Ratio	83.273	4	.000
Linear-by-Linear Association	76.358	1	.000
<b>No of Valid Cases</b>	<b>200</b>		

**TABLE**

**22**

**Find out significant difference between people are ready to watch advertisement without celebrities and people expect more celebrity to appear in future advertisement**

Chi-Square Tests					
	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	8.793 <sup>a</sup>	1	.003		
Continuity Correction <sup>b</sup>	7.818	1	.005		
Likelihood Ratio	8.774	1	.003		
Fisher's Exact Test				.004	.003
Linear-by-Linear Association	8.749	1	.003		
<b>No of Valid Cases</b>	<b>200</b>				

**TABLE 23 Find out significant difference between celebrities will be always helpful for the success of advertisement and celebrity advertisement are more effective than non celebrity advertisement**

<b>Chi-Square Tests</b>			
	<b>Value</b>	<b>df</b>	<b>Asymp. Sig. (2-sided)</b>
Pearson Chi-Square	132.607 <sup>a</sup>	16	.000
Likelihood Ratio	115.985	16	.000
Linear-by-Linear Association	49.182	1	.000
<b>No of Valid Cases</b>	<b>200</b>		

**TABLE 24 Find out whether one celebrity in more brand is dependent on one brand with more celebrity**

<b>One celebrity in more brand advertisement</b>					
	<b>Sum of Squares</b>	<b>Df</b>	<b>Mean Square</b>	<b>F</b>	<b>Sig.</b>
Between Groups	30.818	4	7.704	8.576	.000
Within Groups	175.182	195	.898		
<b>Total</b>	<b>206.000</b>	<b>199</b>			

**TABLE 25 Find out whether advertisement with good concept and absence of celebrity is dependent on information expected from advertisement**

<b>Advertisement with good concept and absence of celebrity</b>					
	<b>Sum of Squares</b>	<b>Df</b>	<b>Mean Square</b>	<b>F</b>	<b>Sig.</b>
Between Groups	4.332	3	1.444	1.407	.242
Within Groups	201.223	196	1.027		
<b>Total</b>	<b>205.555</b>	<b>199</b>			

**TABLE 26 Find out whether seen your favourite celebrity in advertisement is dependent on field of celebrity appearing in advertisement**

<b>Seen your favourite celebrity in advertisement</b>					
	<b>Sum of Squares</b>	<b>df</b>	<b>Mean Square</b>	<b>F</b>	<b>Sig.</b>
Between Groups	.346	3	.115	.816	.487
Within Groups	27.734	196	.141		
<b>Total</b>	<b>28.080</b>	<b>199</b>			

**TABLE 27 Find out whether watching all types of advertisements is dependent on type of advertisement watching regularly**

<b>Watching all types of advertisements</b>					
	<b>Sum of Squares</b>	<b>df</b>	<b>Mean Square</b>	<b>F</b>	<b>Sig.</b>
Between Groups	.495	3	.165	.940	.422
Within Groups	34.380	196	.175		
<b>Total</b>	<b>34.875</b>	<b>199</b>			

# An Application of Signed-Distance Ranking Function Methodology to the Multi-Item Inventory Optimization Model within a Supply Chain

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## ABSTRACT

In this paper, we revisit the multi-item economic order quantity inventory model (MI-EOQ) under uncertainty, arbitrariness and randomness. To solve such a problem, we use the signed distance ranking function methodology. In our approach, we quantify the model parameters in the MI-EOQ inventory model by fuzzy distribution function rather than random variables. Numerical examples are provided towards the end of the paper to illustrate the salient point in the model formulation. The proposed methodology to the MI-EOQ inventory model can be easily extended to other more complex inventory models whose models parameters cannot be obtained precisely.

*Keywords:* Multi-item economic order model (MI-EOQ), Fuzzy Distribution, Ranking Function, Uncertainty, Arbitrariness, Randomness.

## INTRODUCTION

Recently, there has been growing interest in using fuzzy sets theory such as in finance, economics, supply chain management and inventory models. Decision making problem exhibits some level of arbitrariness, vagueness and fuzziness in the estimation of model parameters. This topic has been extensively studied ever since the introduction of fuzzy sets by Zadeh (1965). As a result, a large volume of research has appeared using fuzzy algebra in optimization and decision making model (Bector and Chandra (2005) and Jimenez *et al.* (2007)). In most optimization model, it is normally assumed that the coefficients of the problems are known exactly. In practice, however, such assumptions are rarely satisfied. Inaccuracies in the input parameters can be accomplished by using fuzzy sets theory (Chakraborty *et al.* (2002)).

Use of ranking functions in optimization has attracted attention in the last few years, (for example, Mahdavi-Amiri

and Nasser (2006), Mahdavi-Amiri and Nasser (2007), Maleki (2004), Maleki (2002) among others). Yao and Wu (2000) used the decomposition principle and the crisp ranking system on  $\mathfrak{R}$ , the set of real numbers, to construct a ranking system for fuzzy numbers. Liou and Wang (1992) proposed the method of ranking fuzzy numbers according to their integral values, Negi and Lee (1993) used possibility programming approach to rank fuzzy numbers, whereas Jimenez *et al.* (2007) proposed a ranking method of fuzzy numbers based on a comparison of their expected intervals. Zhou and Gong (2004) applied the signed distance method to fuzzy linear programming problem among others. As pointed out by Yao and Wu (2000), the signed distance used for fuzzy numbers has some properties that are similar to the properties induced by the signed distance in real numbers.

Currently, most of the optimization models use linear type of fuzzy numbers. As pointed out by Medaglia *et al.* (2002) and

Medasani *et al.* (1998), even though these linear membership functions do provide ease in calculations, they do not represent precisely the linguistic terms being modeled. There are many difficulties associated with selecting the solution of a problem written in linear membership functions and Medaglia *et al.* (2002) and Medasani *et al.* (1998) have highlighted the importance of using non-linear membership functions that can be easily tuned and adjusted. Gupta and Mehlawat (2009) studied a pair of (Bector-Chandra) fuzzy primal-dual problems and prove duality results and an aspiration level approach using a nonlinear exponential membership functions, which was in contrast to the earlier works that have relied on a linear membership function. In this paper, we propose to use a nonlinear type of fuzzy numbers to handle impreciseness in the input data.

The organization of the paper is as follows. In Section 1, certain basic definitions and preliminaries with regard to fuzzy algebra are presented. Section 2 presents the signed distance ranking methods and discuss some important properties relating to ranking of fuzzy numbers. In Section 3, we develop the fuzzy multi-item economic order quantity inventory model (MI-EOQ) under uncertainty, arbitrariness and randomness. We also give some examples to illustrate the approaches taken in this paper. In Section 4, we conclude the paper with some suggestions for future work.

**Preliminaries and Notations**

The purpose of this section is to recall some concepts that we shall use in the sequel. We quote definitions and properties about fuzzy systems with relevant operations. Most of these related definitions and properties may be found in the following two references (Bector *et al.* (2005) and Kaufmann *et al.* (1985)). In the

sequel, we will assume that  $\mathcal{F}$  be the family of fuzzy numbers.

**Definition 1.1** Fuzzy set  $A$  in  $X \subset \mathfrak{R}$ , the set of real numbers, is a set of ordered pairs  $A = \{(x, \mu(x)) : x \in X\}$ , where  $\mu(x)$  is the membership function, grade of membership, degree of compatibility or degree of truth of  $x \in X$  which maps  $x \in X$  to the real

**Definition 1.2** If  $\text{Sup } \mu(x) = 1, x \in \mathfrak{R}$ , then the fuzzy set  $A$  is called a normal fuzzy set in  $\mathfrak{R}$ .

**Definition 1.3** The crisp set of elements that belong to the fuzzy set  $A$ , at least to the degree  $\alpha$ , is called the  $\alpha$ -level set (or

$\alpha$ -cut), i.e.  $A_\alpha = \{x \in X : \mu(x) \geq \alpha, \alpha \in \mathfrak{R}^+\}$ . If the set  $A_\alpha = \{x \in X : \mu(x) > \alpha, \alpha \in \mathfrak{R}^+\}$ , then  $A_\alpha$  is called strong  $\alpha$ -level set (or strong  $\alpha$ -cut).

**Definition 1.4** A fuzzy set  $A$  is said to be a convex set if  $\mu(\lambda x_1 + (1-\lambda)x_2) \geq \min(\mu(x_1), \mu(x_2))$ , and  $\lambda \in [0, 1]$ . Alternatively, a

fuzzy set  $A$  is convex if its every  $\alpha$ -level sets is a convex set.

**Definition 1.5** A fuzzy set  $A$ , which is both convex and normal, is defined to be a fuzzy number on the universal set  $\mathfrak{R}$ .

**Definition 1.6** (Appadoo (2006)) A fuzzy number  $A = \left[ \begin{matrix} a_1 & a_2 & a_3 & a_4 \\ \dots & \dots & \dots & \dots \end{matrix} \right]$ ,

$a_1 < a_2 < a_3 < a_4$  said to be  $O(m, n)$ -

Trapezoidal Fuzzy Number ( $O(m, n)$ -Tr. F. N.) if its membership function is given as

$$\begin{aligned}
 & x \leq a_1 \\
 & a_1 \leq x \leq a_2 \\
 & a_2 \leq x \leq a_3 \\
 & a_3 \leq x \leq a_4 \\
 & x \geq a_4
 \end{aligned}
 \tag{1.1}$$

If we set  $m = n = 1$  in (1.1), we obtain the membership function of a trapezoidal fuzzy number (Tr. F. N.).

If we set  $m = n = 1$ ,  $a_3 = a_2$  and  $a_4 = a_3$  in (1.1), we obtain the membership function of a triangular fuzzy number (T. F. N.).

If we set  $m = n = 1$ ,  $a_1 = a - \alpha$ ,  $a_2 = a$ ,

$a_3 = b$  and  $a_4 = b + \beta$  in (1.1), where we referred to  $\alpha$  as the left width,  $\beta$  as the

Alternatively, following Kaufmann and Gupta (1985, pg. 26, 27), defining the  $\alpha$ -cut (interval of confidence at level- $\alpha$ ) as

$$\alpha = [ \alpha^L, \alpha^R ], \text{ we characterize }$$

$$\forall \alpha \in [0, 1] \text{ as }$$

by setting  $1 - \frac{(a_2 - x)^m}{(a_2 - a_1)^m} = \alpha$  and

$$\frac{(x - a_3)^n}{(a_4 - a_3)^n} = \alpha \text{ respectively.}$$

An  $O(m, n)$ -Tr. F. N. is said to be

symmetric if it satisfies the following two conditions.

- (a)  $a_2 - a_1 = a_4 - a_3$ ,
- (b)  $m = n$

Below, we discuss the trapezoidal fuzzy number (Tr. F. N.) and triangular fuzzy number (T. F. N.) as special cases of the  $O(m, n)$ -Tr. F. N.

fuzzy number, we obtain an alternative definition for the membership function of a Tr. F. N. (see Carlsson and Fuller (2003) for detail).

In the definition of (1.1), the definition of  $O(., .)$  T. F. N.'s follows as special cases.

### Ranking of Fuzzy Numbers [Baykasoglu et al. (2007), Bector et al. (2005), Yao et al. (2000)]

Ranking of fuzzy numbers is important in fuzzy algebra. Ranking functions are useful in fuzzy optimization. Let  $\mathcal{F}$  be the family of fuzzy numbers on  $\mathcal{R}$  and  $A$  and  $B \in \mathcal{F}$ . In this approach a suitable function  $R: \mathcal{F} \rightarrow \mathcal{R}$ , called a ranking function or ranking index is defined and  $R(A) \leq R(B)$  is treated as equivalent to  $A \leq B$ . Since  $R(A) \leq R(B)$  will, in

general, not necessarily mean  $A = B$ , this ranking is to be understood in the sense of equivalence classes only.

### The Signed Distance Ranking Method

One convenient approach for solving fuzzy optimization problem is based on the concept of comparison of fuzzy numbers by making use of ranking functions (Baykasoglu et al. (2007), Yao et al. (2000)). An effective approach for ordering the

elements of  $\mathcal{F}(\mathcal{R})$  is to define a ranking

function  $R: F(\mathbb{R}) \rightarrow \mathbb{R}$  which maps each

fuzzy number into the real line, where a natural order exists. The signed distance method for ranking fuzzy numbers is as follows. The signed distance is defined as

$d(a, 0) = a$  on  $F$  then for  $a, b \in \mathbb{R}$ ,

$d^*(a, b) = a - b$ . For  $D, E \in F$ , with  $\alpha$ -cut

$(0 \leq \alpha \leq 1)$ , there exists a closed interval

$$[D_L(\alpha), D_R(\alpha)]$$

distance of  $D, E$  is defined as (Baykasoglu et al. (2007), Yao et al. (2000)),

$$d(D, E) = \frac{1}{2} \int_0^1 (D_L(\alpha) + D_R(\alpha) - E_L(\alpha) - E_R(\alpha)) d\alpha \tag{2.1}$$

It can be proved (Baykasoglu et al. (2007), Yao et al. (2000)) that  $d$  is an extension of  $d^*(a, b)$  and

$$d(D, E) > 0 \text{ iff } d(D, 0) > d(E, 0) \quad E \prec D \tag{2.2}$$

$$d(D, E) < 0 \text{ iff } d(D, 0) < d(E, 0) \quad D \prec E \tag{2.3}$$

$$d(D, E) = 0 \text{ iff } d(D, 0) = d(E, 0) \quad D \approx E \tag{2.4}$$

According to these definitions, the signed distance of  $A = [a_1, a_2, a_3, a_4]$  is defined as

$$d(A, 0) = \frac{1}{2} \int_0^1 \left( (a_2 - a_1)(1 - \alpha)^{\frac{1}{m}} + (a_3 - a_4)\alpha^{\frac{1}{n}} \right) d\alpha \tag{2.5}$$

$$= \frac{1}{2} \left( \frac{a_2 + ma_1}{1+m} + \frac{a_3 + na_4}{1+n} \right) \tag{2.6}$$

The signed distance of a trapezoidal fuzzy number  $A = (a_1, a_2, a_3, a_4)$  is defined as

$$d(A, 0) = \frac{(a_1 + a_2 + a_3 + a_4)}{4} \tag{2.7}$$

The signed distance of a triangular fuzzy number  $A = (a_1, a_2, a_3)$  is defined as

$$d(A, 0) = \frac{(a_1 + 2a_2 + a_3)}{4} \tag{2.8}$$

If  $A$  and  $B$  are  $O(m, n)$ -Tr. F. N., their ranking relation is defined as (Yao et al. (2000)),  $A \leq B \Leftrightarrow d(A, 0) \leq d(B, 0)$ .

Furthermore, it is important to note here that if  $d(A, B) = 0$ , it does not necessarily mean that  $A = B$ .

then

$$\frac{(a_1 - b_3 - b_4 + 2a_2 + a_3 - b_1 - b_2)}{4} \tag{2.9}$$

If  $A = [a_1, a_2, a_3, a_4]$  and  $B = [b_1, b_2, b_3, b_4]$  are two Tr. F. N.'s,

then the following results are proved easily.

$$\frac{(a_2 + a_3 + (a_2 + a_4)n_1 + (a_1 + a_3)m_1 + m_1n_1)(a_4 + a_1)}{2(1+n)(1+m)} - \frac{(b_2 + b_3 + (b_2 + b_4)n_2 + (b_1 + b_3)m_2 + m_2n_2)(b_4 + b_1)}{2(1+n)(1+m)} \tag{2.10}$$

If  $A$  and  $B$  are two Tr. F. N.'s, then

$$d(A, B) = \frac{(a_1 + a_2 + a_3 + a_4)(b_1 + b_2 + b_3 + b_4)}{4} \tag{2.11}$$

if  $A$  and  $B$  are two T. F. N.'s, then

$$d(A, B) = \frac{(a_1 \pm 2a_2 \pm a_3) - (b_1 \pm 2b_2 \pm b_3)}{4} \quad (2.12)$$

In general,  $d(A, B) + d(B, A) = 0$ ,

$\forall A$  and  $B \in F$ , where  $F$  is the family of all fuzzy numbers.

Using the concepts introduced and the results deduced in Section 1 and Section 2, we now discuss the multi-item economic order quantity inventory model (MI-EOQ).

### Application of the Multi-Item Inventory Optimization Model

Consider the fuzzy multi-item EOQ problem as given in Baykasolu *et al.* (2007) and Mondal and Maiti (2002). The fuzzy multi-item EOQ model is defined as

(FMIEM1)

$$\Re \left( \sum_{i=1}^M \left( \frac{c_{1i} Q_i}{2} + \frac{c_{2i} D_i}{Q_i} \right) \right) \quad (3.1)$$

Subject to

$$\sum_{i=1}^M M_i \leq W \quad (3.2)$$

In the fuzzy (MI-EOQ) for  $n$  items, the main objective is to find the order level

$Q_i (> 0), i = 1, 2, M$ , when minimizes the fuzzy average total cost  $C(Q)$ ,  $Q_i$  is the

MI-EOQ for the  $i^{th}$  item. The models parameters are listed below.

$c_{1i}$  is the fuzzy holding cost per unit

quantity per unit time for the  $i$

item.

$c_{2i}$  is the fuzzy set up cost per period for the  $i^{th}$  item.

$D_i$  is the demand per unit time for the  $i^{th}$  item.  
 $a_i$  is the fuzzy space required by each

unit of product  $i$  (in  $m^2$ ).

$M_i$  is the fuzzy total demand of product  $i$  during some given time interval.

$W$  is the fuzzy maximum available warehouse space (in  $m^2$ ).

$n$  is the fuzzy maximum number of orders placed during the given time period and  $m$  is the number of items.

If the parameters of the fuzzy multi-item EOQ problem as given in Baykasolu *et al.* (2007) and Mondal and Maiti (2002) are defined as  $O(m, n)$ -T. F. N.'s. Thus, the

fuzzy parameters can be represented as follows.

$$\begin{aligned} c_{1i} &= (c_{11i}, c_{21i}, c_{31i}, c_{41i}) \\ c_{2i} &= (c_{21i}, c_{22i}, c_{23i}, c_{24i}) \\ M_i &= (m_{1i}, m_{2i}, m_{3i}, m_{4i}) \\ W &= (w_1, w_2, w_3, w_4) \end{aligned}$$

Using (2.6), we can rewrite model formulation given by (MIEM1) as below.

(MIEM2)

$$\Re \left( \sum_{i=1}^M \left( \frac{c_{1i} Q_i}{2} + \frac{c_{2i} D_i}{Q_i} \right) \right) \quad (3.3)$$



Subject to

$$\sum_{i=1}^M \left( \frac{a_i + 2a_i + a_i}{4} \right) \leq \left( \frac{a_i + 2a_i + a_i}{4} \right)$$

$$\sum_{i=1}^M \left( \frac{M_{2i} + m^{2i} M_{1i}}{1+m} + \frac{M_{3i} + n^{2i} M_{4i}}{1+n} \right) \leq \left( \frac{m_{2i} + m^{2i} n_{1i}}{1+m} + \frac{n_{3i} + n^{2i} n_{4i}}{1+n} \right)$$

where  $Q_i \geq 0, i = 1, 2, \dots, M$ .

**Remark 3.1** It is important to note here that the model formulation as given in (MIEM2) is crisp in a fuzzy sense. From a theoretical point of view, fuzzy numbers can only be partially ordered. It is not as easy to compare fuzzy numbers as to compare real numbers. In many cases, however, whenever fuzzy numbers are used in practical applications as in the model we discuss in this paper, a comparison of fuzzy numbers become necessary.

**Remark 3.2** If we assume that

in (MIEM2), we obtain a fuzzy multi-item EOQ problem with input parameters as Tr. F. N.'s as follows.

(MIEM3)

$$\sum_{i=1}^M \left( \frac{(c_{31i} + c_{21i} + c_{41i}) Q_i + (c_{21i} + c_{22i} + c_{32i} + c_{42i}) D_i}{4} \right)$$

Subject to

$$\sum_{i=1}^M \left( \frac{a_i + 2a_i + a_i + a_i}{4} \right) \leq \left( \frac{W+W}{2} + \frac{W+W}{4} \right)$$

$$\sum_{i=1}^M \left( \frac{M_{1i} + M_{2i} + M_{3i} + M_{4i}}{4} \right) \leq \left( \frac{m_{1i} + n_{2i} + n_{3i} + n_{4i}}{4} \right)$$

where  $Q_i \geq 0, i = 1, 2, \dots, M$ .

**Remark 3.3** if we assume that

in (FMIEM1) along with

$$c_{31i} = c_{21i}$$

$$c_{42i} = c_{32i} \quad c_{32i} = c_{22i}$$

$$M_{4i} = M_{3i}, \quad M_{3i} = M_{2i}, \quad n_{4i} = n_{3i}, \quad n_{3i} = n_{2i}$$

$W_4 = W_3, W_3 = W_2, a_{4i} = a_{3i}$ , and  $a_{3i} = a_{2i}$ , we obtain a fuzzy multi-item EOQ problem with input parameters as Tr. F. N.'s as follows.

(MIEM4)

$$\sum_{i=1}^M \left( \frac{a_i + 2a_i + a_i + a_i}{4} \right) \leq \left( \frac{W+W}{2} + \frac{W+W}{4} \right)$$

Subject to

$$\sum_{i=1}^M \left( \frac{a_i + 2a_i + a_i}{4} \right) \leq \left( \frac{W+W}{2} + \frac{W+W}{4} \right)$$

$$\sum_{i=1}^M \left( \frac{M_{1i} + 2M_{2i} + M_{3i}}{4} \right) \leq \left( \frac{m_{1i} + 2m_{2i} + m_{3i}}{4} \right)$$

where  $Q_i \geq 0, i = 1, 2, \dots, M$ .

**Example 1** The input data given in Table 1 and Table 2 are somehow similar to the data used by Baykasolu et al. (2007) and Mondal and Maiti (2002). In this example, all the parameters are assumed to be

Tr. F. N.'s and The fuzzy multi-

item EOQ problem of the present study can be explicitly stated as

$$\sum_{i=1}^M \left( \frac{(c_{31i} + c_{21i} + c_{41i}) Q_i + (c_{21i} + c_{22i} + c_{32i} + c_{42i}) D_i}{4} \right) \leq \frac{250}{8}$$

$$(150, 200, 230, 350) \leq \frac{Q_i}{8} + (225 \times 10^3, 245 \times 10^3, 250 \times 10^3, 260 \times 10^3) \leq \frac{850}{8}$$

(3.4)

Subject

to

$$\sum_{i=1}^M \left( \frac{M_{1i} + 2M_{2i} + M_{3i}}{4} \right) \leq \left( \frac{m_{1i} + 2m_{2i} + m_{3i}}{4} \right)$$

where  $Q_1, Q_2 \geq 0$ . The present fuzzy multi-

item EOQ problem can be converted into the following crisp problem based on the signed distance ranking function method.

$$MinC(Q) = 114.88Q_1 + \frac{2.7395 \times 10^7}{Q_1} + 124.17Q_2 + \frac{2.0664 \times 10^8}{Q_2} \quad (3.5)$$

Subject to

$$\begin{aligned} 0.90333Q_1 + 0.89583Q_2 &\leq 1615.5 \\ \frac{0.89583}{Q_1} + \frac{3924.2}{Q_2} &\leq 23.893 \end{aligned}$$

where  $Q_1, Q_2 \geq 0$ . The resultant crisp problem is solved by using Solver. The solution obtained is  $Q_1 = 488.3268077$ ,  $Q_2 = 1290.017092$  and the corresponding objective function value of the crisp model is  $C(Q) = 432564.0559$ .

**Example 2** The input data to this example is similar to those of Example 1. The only major exception in this example is that the parameters  $m$  and  $n$  are all similar to all the input data. The resulting formulation is

$$MinC(Q) = \left( \frac{25(9+10n+8m+9mn)}{(Q_1)^2} + \frac{(1250000(22+23n+21m+22mn))}{(Q_1)^2} \right) + \left( \frac{5(43+55n+38m+50mn)}{(Q_2)^2} + \frac{(2125000(99+101n+95m+97mn))}{(Q_2)^2} \right) \quad (3.6)$$

Subject to

$$\begin{aligned} \frac{0.1(9+10n+8m+9mn)}{(Q_1)^2} + 0.0517 + \frac{19n+16m+18mn}{(Q_1)^2} + \frac{Q_2}{(Q_1)^2} &\leq \frac{(25(61+66n+60m+65mn))}{(Q_1)^2} \\ \frac{25(361+368n+341m+348mn)}{(Q_1)^2} + \frac{25(165+166n+155m+156mn)}{(Q_2)^2} &\leq \frac{45+50n+43m+48mn}{(Q_2)^2} \end{aligned}$$

where  $Q_1, Q_2 \geq 0$ ,  $m, n > 0$ . The resultant crisp problem is solved by Solver. The solutions obtained are tabulated in Table 3.

This is another illustration that values of  $m$  and  $n$  influence the optimal solution. It is important to note here that selecting values of  $m$  and  $n$  are extremely important in decision analysis. This example confirms findings by Medaglia *et al.* (2002) and Medasani *et al.* (1998). There are many difficulties associated with selecting the solution of a problem written in linear membership functions and they have highlighted the importance of using non-linear membership functions that can be easily tuned and adjusted (Medaglia *et al.* (2002) and Medasani *et al.* (1998)).

### CONCLUSION

In this paper, we use signed distance ranking method to solve the fuzzy multi-item economic order quantity inventory model (MI-EOQ) under uncertainty, arbitrariness and randomness. We transform the fuzzy model into deterministic optimization programming model. Illustrative numerical examples are given. This approach appears to be computationally easy to implement. We believe that this study has highlighted the difficulties arising naturally while dealing with fuzzy optimization model. Unlike the linear programming case with fuzzy data, where different but concrete theories are available to compute the optimal solution much, is needed to be done for the fuzzy nonlinear programming case.

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**Table 1: Fuzzy Data for Multi Inventory Model**

Item	$c_{1j}$	$c_{2j}$	$a_j$
1	$(150, 200, 250, 300)_{2,6}$	$(90 \times 10^3, 100 \times 10^3, 120 \times 10^3, 130 \times 10^3)$	$(0,6, 0,8, 1,0, 1,2)_{4,5}$
2	$(150, 200, 230, 350)_{4,8}$	$(225 \times 10^3, 245 \times 10^3, 250 \times 10^3, 260 \times 10^3)$	$(0,6, 0,7, 1,0, 1,2)_{3,5}$

**Table 2: Fuzzy Data for Multi Inventory Model**

Item	$D_j$	$M_j$	$W$
1	250	$(7550, 8500, 9550, 9900)$	$(100, 100, 100, 100)$
2	850	$(100, 100, 100, 100)$	

**Table 3: Solution to Multi Inventory Model for Different Values of  $m$  and  $n$** 

	$m$	$n$	$Q_1$	$Q_2$	$cQ$
Case 1	0	0	466.9850681	1299.662869	413006.8719
Case 2	1	1	481.2986377	1304.949913	422568.2754
Case 3	0.5	6	481.4757415	1267.887637	445977.5539
Case 4	6	0.5	489.0899383	1345.228424	402389.9035
Case 5	10	8	494.7274414	1296.453242	429476.8251
Case 6	100	100	494.3687753	1285.169399	432093.1054

Figure 1. Membership Function for Different Values of  $m$  and  $n$

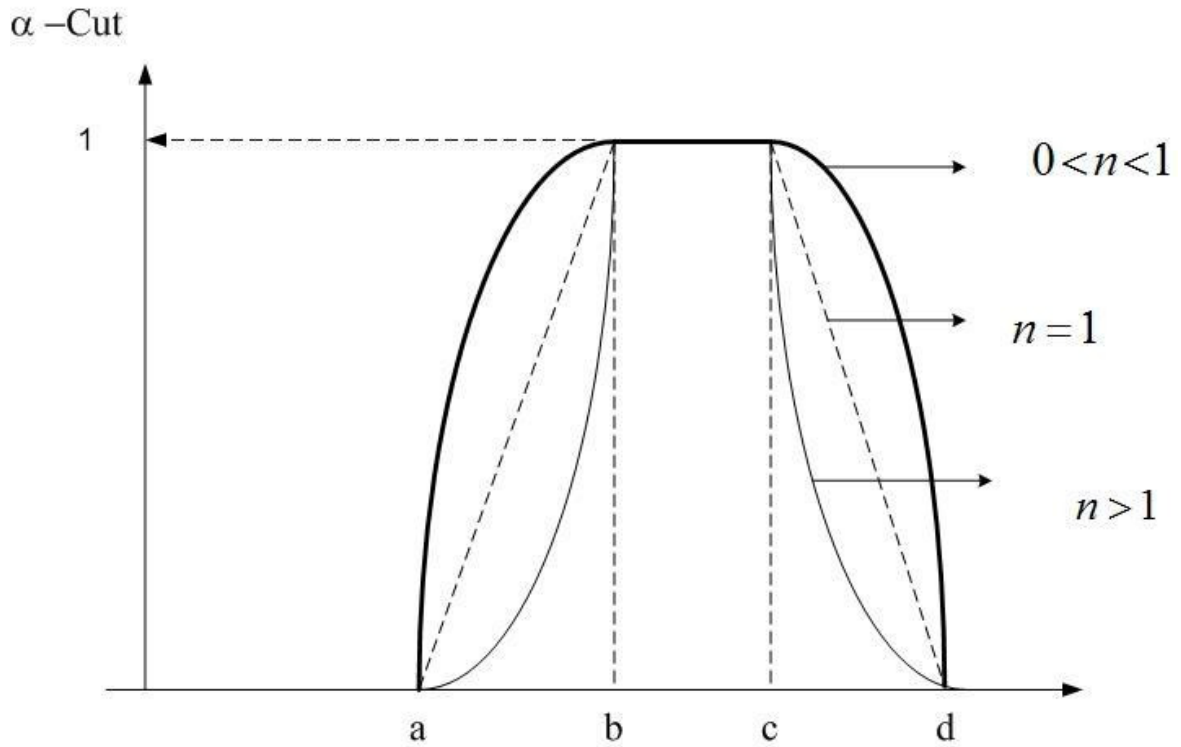
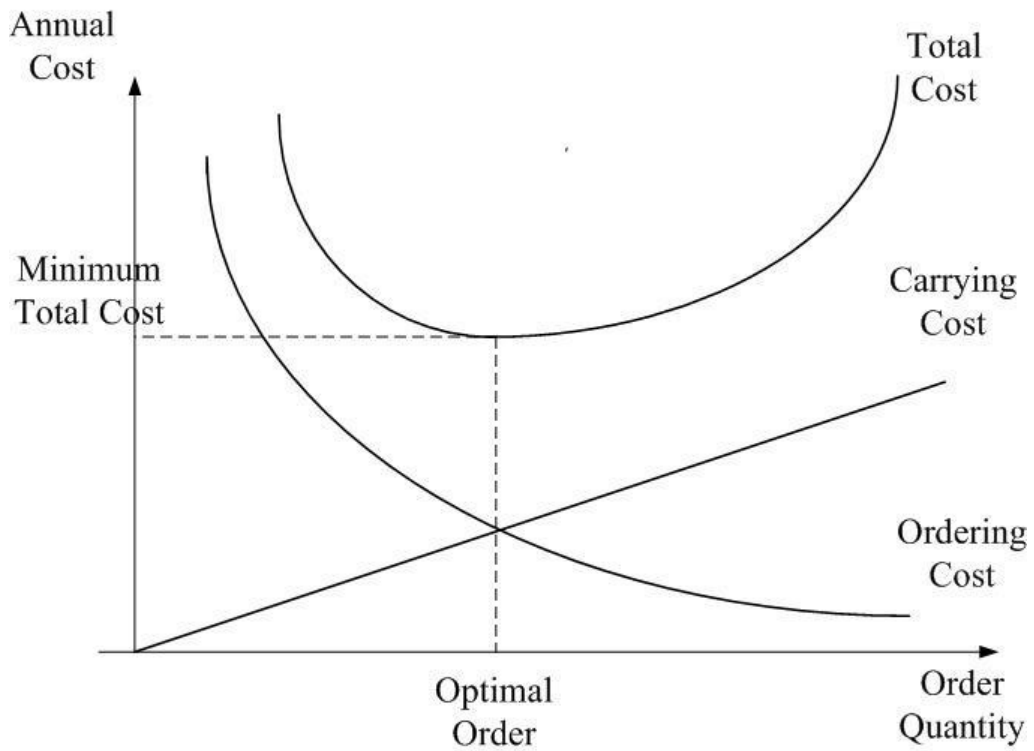


Figure 2: EOQ Inventory Model



# Financial Analysis on Sundaram Clayton Limited

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## ABSTRACT

This paper attempted to review the financial performance of Sundaram Clayton Limited which is a market leader in the field of air and assisted Brake actuation system for a wide range of commercial and earth moving vehicles in India. This study is based on secondary data collected from the annual reports of the company for the last 5 years. The collected data have been tabulated, analyzed and interpreted with the help of different financial ratios, Multivariate Discriminate Analysis (MDA) as developed by Prof. Altman and trend analysis. It was observed from the study of the company is performing well and the researcher has suggested about the use of debt which is very low currently and also concluded that the company has to take steps to improve the profitability...

Key Words: Financial Statement Analysis, Financial Analysis, Ratio Analysis.

## INTRODUCTION

Sundaram Clayton Limited is the pioneer and market leader in the field of air and assisted Brake actuation system for a wide range of commercial and earth moving vehicles. Sundaram Clayton Limited has two main division's Viz., Brakes Division and the Foundry Division. The two ventures promoted by SUNDARAM CLYTON LIMITED viz., TVS Suzuki Limited for the manufactures of two wheelers and T V S Electronics limited for the manufacture of computer peripherals, have already made a mark in their respective segments Sundaram Clayton Limited, also owns 100% subsidiaries in the name of Anusha Investments limited, Harita Stocks Limited and TVS finance limited. The company's foundry Division from being supplier to the Brakes division has progressed to supply to a host of Indians companies and has an installed capacity of over 7000 MT per annum of gravity and pressure die - casting.

## INDUSTRY OVERVIEW

The fastest moving industry is the automobile industry. According to a survey, in 1992 the percentage of automobile users in India was

nearly 43%. But in the year, 1998, it drastically increased to nearly 78%. The number of automobiles in the country increased due to the industrialization. Automotive industry has universally emerged as an important driver in the economy. Although the automotive industry in India is nearly six decades old, until 1982, only three manufactures - M/s. Hindustan Motors, M/s. Premier Automobiles and M/s. Standard Motors tenanted the motor car sector. Owing to low volumes, it perpetuated obsolete technologies and was out of sync with the world industry.

In 1982, Maruti Udyog Ltd. (MUL) came up as a government initiative in collaboration with Suzuki of Japan to establish volume production of contemporary models. After the lifting of licensing in 1993, 17 new ventures have come up of which 16 are for manufacture of cars. This industry currently accounts for nearly 4% of the GNP and 17% of the indirect tax revenue. India manufactures about 38,00,000 2 - wheelers, 5,70,000 passengers cars, 1,25,000 Multi - Utilities Vehicles, 1,70,000 Commercial Vehicles and 2,60,000 tractors annually. India ranks second in the production of two wheelers and fifth in commercial vehicles.

## FINANCIAL STATEMENT ANALYSIS

Financial ratios are the simplest tools for evaluating the financial performance of the firm Wen-Cheng LIN et.al. (2005). One can employ financial ratios to determine a firm's liquidity, profitability, solvency, and capital structure and assets turnover. Hannan and Shaheed (1979) used financial ratios to show the financial position and performance analysis of India Shilpa Bank. He showed that techniques of financial analysis can be used in the evaluation of financial position and performance of financial institution as well as non financial institutions even Development Financial Institutions (DFI). Altman (1968) used financial ratios to predict corporate bankruptcy. He found that the bankruptcy model has an accuracy rate of 93% and is very successful in predicting failed and non-failed firms. Sina and Arshed Ali (1998) used financial ratios to test the financial strengths and weaknesses of Khulna Newsprint Mills Ltd. He found that due to lack of planning and control of working capital, operational inefficiency, obsolete store, ineffective credit policy, increased cost of raw materials, labor and overhead, the position of the company was not good. Saleh Jahur and Mohi Uddin (1995) used financial ratios to measure operational performance of limited company. They used profitability, liquidity, activity and capital structure to measure operational performance. Saleh Jahur and Parveen (1996) used Altman's MDA model to conclude the bankruptcy position of Chittagong Steel Mills Ltd. They found that absences of realistic goals, strict govt. regulation are the main reasons for the lowest level of bankruptcy. Ohlson (1980) employed financial ratios to predict a firm's crisis. He found that there are four factors affecting a firm's vulnerability. These factors are the firm's scale, financial structure, performance and liquidity.

In the article "The Assessment of Financial and Operating Performance of the Cement Industry: A Case Study of Confidence Cement Limited", Dutta and Bhattacharjee (2001) found that the investment in cement

was fairly profitable. Salauddin (2001) examined the profitability of the Pharmaceutical Companies of India. By using ratio analysis, mean, standard deviation and co-efficient of variation he found that the profitability of the Pharmaceuticals sector was very satisfactory in terms of the standard norms of return on investment. Hye & Rahman (1997) conducted a research to assess the performance of the selected private sector general insurance companies in India. The study revealed that the private sector insurance companies had made substantial progress. The study found that the insurance companies were keeping their surplus funds in the form of fixed deposits with different commercial banks due to absence of suitable avenues for investment. These studies attest that the ratio analysis and MDA are the good method to evaluate firm performance.

## OBJECTIVES OF THE STUDY

To Analyse and interpret the financial health and stability of the company for the period 2006-10

## RESEARCH METHODOLOGY

It is exploratory research which uses published data and annual reports of the company to analyse the financial position of the company. Secondary data is collected from company's catalogue, brochures and materials issued by the organization and also collected from the information Technology Such as, CD Rom, Internet. The period of study is five years from 2006-2010. There were several limitations of the study which includes 1) The study is purely based on secondary data as obtained from the annual financial reports of the organization. 2) Time is the major limiting factor of the study. 3) It is not possible to analyze all the aspects in detail within the time allowed. 4) The data taken for analysis covers only a period of 5 years i.e., from 2006 to 2010 so the study indicates only what happened in the specific period. 5) Inter firm comparison is not

possible because the study covers only a single organization.

### Method of Analysis

Ratio Analysis

Du Pont Analysis<sup>1</sup>

Altman Z score

### Empirical Findings:

From the table no.1, we can understand the financial condition of the company, it has been found that the current asset ratio was in an increase trend but the acid test ratio was in a fluctuating trend. So the company should check the inventory levels. Also the dividend Payment and net worth are at satisfactory levels but the working capital and fixed assets are fluctuating. Company's Debt – equity ratio is at less optimal levels which means the company rely more on equity to fund its investments which is not ideal. Always satisfying the investors will be a difficult task, so the company should make a decision on increasing the debt levels.

The above table on DuPont analysis which is an alternative method for finding the Return on Investments, but it is in increasing trend and the company should try to maintain the same level.

### Multi Discriminate Analysis

After examining liquidity, profitability and solvency of sample Industry, now it is necessary to examine the overall financial soundness of the company during the study period. In this context Multivariate Discriminate Analysis (MDA) model as developed by Prof. Altman may be considered worthwhile. The said model can give some rough idea about the financial soundness of the selected industry. He developed the following equation for judging the financial soundness of an enterprise.

$$Z = 0.012x_1 + 0.014x_2 + 0.033x_3 + 0.006x_4 + .999x_5$$

Where;

X<sub>1</sub>: Working Capital / Total Assets X<sub>2</sub>:

Retained earnings / Total Assets

X<sub>3</sub>: Earnings before interest & taxes / Total

Assets X<sub>4</sub>: Market value of equity / Total debt

X<sub>5</sub>: Sales / Total

Assets Z: Score

In order to test the overall financial soundness of the selected pharmaceuticals, it needs to calculate the ratios of working capital to total assets, retained earnings to total assets, earnings before interest & taxes to total assets, market value of equity to book value of total debt and sales to total assets.

The table-16 depicts the year wise as well as average position of the ratios of working capital to total assets, retained earnings to total assets, earnings before interest and taxes to total assets, market value of equity to total debt and sales to total assets.

The Altman Z score is used to Predict the bankruptcy potential of the company and if the score is less than 2.675 then the company may fail in the near future, but the above table infers that in all the years it is above 2.675 so it can be concluded that the overall financial soundness of the company during the study period had been very good, there is no sign of bankruptcy potential

### CONCLUSION

From the discussion it can be concluded that the financial position and operational performance of Sundaram Clayton limited was very satisfactory. The efficiency of financial management is evidenced through

Prof. Altman's MDA model. By applying this model it is seen that the overall financial position is seemed to be excellent. The only suggestion goes from the study is on the use of debt which is underutilized. Even though the company may have plans to use it while they are expanding, currently it is not prudent to use more of equity than debt.



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**TABLE 1**  
**RATIOS AT A GLANCE (2002 - 2006)**

<b>Particulars</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>
Current Ratio	1.56%	1.79%	1.66%	1.42%	1.35%
Liquid Ratio	1.40%	1.53%	1.47%	1.27%	1.17%
Gross Profit Ratio	16.4%	16.7%	15.4%	16.8%	19.7%
Net Profit Ratio	9.9%	9.8%	7.4%	9.1%	12.1%
Operating Profit Ratio	12.79%	13.35%	10.56%	12.42%	15.72%
Earnings Per share	Rs.8.35	Rs.11.95	Rs.9.43	Rs.11.52	Rs.19.0
Price Earnings Ratio	1.20	0.84	1.06	0.87	0.53
Dividend Payout Ratio	3.0	3.5	3.0	6.0	6.5
Return on Investment	16.63%	17.54%	12.5%	17.29%	23.76%
Debt equity Ratio	0.1	0.22	0.21	0.06	0.05
Fixed assets to Net worth	0.51	0.6	0.63	0.65	0.7
Current assets to Net worth	0.67	0.72	0.76	0.66	0.62
Interest coverage Ratio	-	51.6	16.61	23.77	-
Fixed assets turnover Ratio	2.46	2.72	2.50	2.48	2.39
Working capital turnover Ratio	5.27	5.19	5.21	9.20	10.63
Debtors turnover Ratio	3.42	4.16	3.27	4.90	5.21
Creditors turnover Ratio	1.78	3.05	2.31	2.45	2.64

**TABLE 2**  
**DU PONT CONTROL ANALYSIS**

<b>Particulars</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>
Net Profit Ratio (A)	9.9%	9.8%	7.4%	9.1%	12.1%
Capital Turnover Ratio (B)	1.68	1.79	1.69	1.90	1.96
Return On Investment (AxB)		16.63%	12.50%	17.29%	23.76%

**TABLE 2**  
**MULTI DISCRIMANANT ANALYSIS**

<b>Particulars</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>
Z Score	3.65	3.46	2.95	2.99	3.86