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# EP Journal of Business Strategy

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The aim of Journal of Business Strategy is to identify the theoretical and practical issues faced by corporations and small scale businesses all over the world this journal disseminate knowledge and information about theoretical advancement and the best practices of business. It covers all the major business disciplines (but not limited) including:

- Strategic Management
- E-commerce
- Entrepreneurship
- Ethics in Business
- Corporate Finance
- Economics of Organizations and Industries
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# EP Journal of Business Strategy

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# “Effect of Information and Knowledge Sharing on Supply Chain Performance”

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## ABSTRACT

*This paper aims to show how modern information and communication technology influence Supply chain management. We will present a summary of the discussion of information and communication technology components and Supply chain management. Then, we will discuss the interrelation between ICT and SCM from some major components and applications of ICT perspective. The paper looks at all of the major components of electronic supply chain management. Critical ICT contributions and implementations are discussed.*

*Fundamental changes have occurred in today's economy. These changes alter the relationship we have with our customers, our suppliers, our business partners and our colleagues. It also describes how ICT developments have presented companies with unprecedented opportunities to gain competitive advantage. So ICT investment is the pre-requisite thing for each firm in order to sustain in the market.*

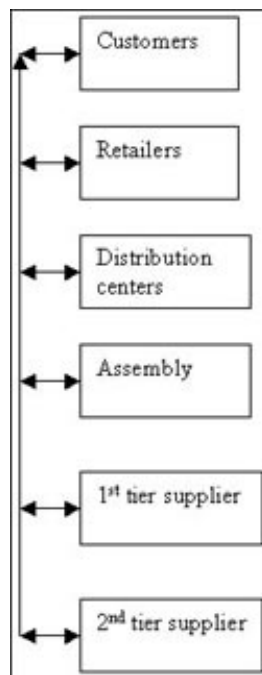
**Keywords - Information Sharing, Knowledge Sharing, Supplier-Buyer Relationship, Suppliers**

## 1. INTRODUCTION

By Supply Chain (SC) we understand "network of organizations that are involved, through upstream and downstream linkages, in the different processes and activities that produce value in the form of products and services in the hands of (ultimate) customer"

Supply chain management (SCM) is concerned with the flow of products and information between supply chain members' organizations. Recent development in technologies enables the organization to avail information easily in their premises. These technologies are helpful to coordinate the activities to manage the supply chain. The cost of information is decreased due to the increasing rate of technologies. In the integrated supply chain model (Fig.1) bi-directional arrow reflect the accommodation of reverse materials and information feedback flows. Manager needs to understand that information technology is more than just computers. Except computer data recognition equipment, communication technologies,

, factory automation and other hardware and services are included.



## DIFFERENCE BETWEEN MODERN AND TRADITIONAL SCM

THE traditional way of managing supply chains has changed dramatically over the last decade. Face-to-face management, manual tracking systems, paper-dominated order processing systems, and wired communication links were the primary management tools available to logistics managers. Today, they are obsolete.

The countries which have successfully experimented with the supply chain network and knowledge management in the private sector have definite experience to share and lessons and road-map to follow. It has been widely acknowledged that supply chain network has been successfully implemented by the business sector and governments. SCM has gained importance in the marketing field as being one of the main marketing processes that has a positive influence on shareholder value.

## VARIOUS ASPECTS OF SUPPLY CHAIN MANAGEMENT

Strategic target of SCM is to support competitiveness of SC by (excellent) fulfillment of customer demand, i.e. by excellent customer service

- Competitiveness concerns the whole SC, not only individual organizations which are parts of SC. Therefore SC should be managed as a whole. On the market there is competition between (whole) Supply Chains. The given SC is so competitive as is its "weakest" part (e.g. process).

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- The desired level of competitiveness is to gain durable competitive advantage. SC improvements (even those provided by Electronic Commerce and Electronic Business) which are easily replicated by competitors don't lead to competitive advantage. E.g. use of e-procurement (for reduction of material costs) and on-line ordering (for streamlining customer service) bring benefits to SC participants, but both are easily replicated.
  - integration of organizations which are part of SC and coordination of SC flows are two basic means for improving competitiveness of SC
  - integration includes especially - choice of partners, network organization, inter -organizational collaboration based on interoperability of partner's processes, leadership.
  - From point of view of organizational theory SC is a special form of network organization.
  - coordination includes - process orientation (process view), advanced planning, use of ICT (Information and Communication Technologies)
  - Advanced Planning includes short-term, mid-term and long-term planning. These planning tasks are supported by APS (Advanced Planning System) software.

## GOALS OF SUPPLY CHAIN MANAGEMENT

- 1) A global imbalance in labor costs forces enterprises to source from countries with cheaper labor in order to control production costs to stay competitive.
- 2) Consumers are becoming increasingly more sophisticated, demanding customized products that better meet their needs. The resulting increase in product variation makes demand forecasting more difficult as an enterprise now has to predict both volumes and increased product types result in a greater number of suppliers to manage and higher coordination costs. In addition to optimizing its processes within itself, the enterprises within a supply chain must now coordinate with each other.
- 3) Coordinate the activities of each tier, as well as the transition between tiers to facilitate the smooth and efficient flow of products down the value-added chain at the least cost and minimum delay.
- 4) Match the supply with the market demand
- 5) The final goal is to increase the competitiveness of companies and make operations to be able to contribute to the execution of firms' strategies. This can be accomplished through various programs and techniques, which appear within the company (e.g. ERP, new organizational forms) and along the supply chain both on the supplier side (e.g. vendor managed inventories) and on the distribution side (e.g. efficient customer response, quick response, e-commerce).

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## FUNCTIONS OF SCM

### 1. Strategic level

- Strategic network optimization, including the number, location, and size of warehousing, [distribution centers, and facilities.](#)
- [Strategic partnerships with suppliers, distributors, and customers, creating communication channels for critical information and operational improvements such as cross docking, direct shipping, and third-party logistics.](#)
- [Product life cycle management, so that new and existing products can be optimally integrated into the supply chain and capacity management activities.](#)
- [Information technology chain operations.](#)
- Where-to-make and [make-buy decisions.](#)
- Aligning overall organizational strategy with supply strategy.
- It is for long term and needs resource commitment.

### 2. TACTICAL LEVEL

- Sourcing contracts and other purchasing decisions.
- Production decisions, including contracting, scheduling, and planning process definition.
- Inventory decisions, including quantity, location, and quality of inventory.
- Transportation strategy, including frequency, routes, and contracting.
- [Benchmarking of all operations against competitors and implementation of best practices throughout the enterprise.](#)
- Milestone payments.
- Focus on customer demand and Habits.

### 3. OPERATIONAL LEVEL

- Daily production and distribution planning, including all nodes in the supply chain.
- Production scheduling for each manufacturing facility in the supply chain (minute by minute).
- Demand planning and forecasting, coordinating the demand forecast of all customers and sharing the forecast with all suppliers.
- Sourcing planning, including current inventory and forecast demand, in collaboration with all suppliers.
- Inbound operations, including transportation from suppliers and receiving inventory.
- Production operations, including the consumption of materials and flow of finished goods.



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- Outbound operations, including all fulfillment activities, warehousing and transportation to customers.
  - Order promising, accounting for all constraints in the supply chain, including all suppliers, manufacturing facilities, distribution centers, and other customers.
  - From production level to supply level accounting all transit damage cases & arrange to settlement at customer level by maintaining company loss through insurance company.

### **INFORMATION AND TECHNOLOGY: APPLICATION OF SCM:**

In the development and maintenance of Supply chain's information systems both software and hardware must be addressed. Hardware includes computer's input/output devices and storage media. Software includes the entire system and application programme used for processing transactions management control, decision-making and strategic planning. Recent development in Supply chain management software is:

1. Base Rate, Carrier select & match pay (version 2.0) developed by Distribution Sciences Inc. which is useful for computing freight costs, compares transportation mode rates, analyze cost and service effectiveness of carrier.
2. A new software programme developed by Ross systems Inc. called Supply Chain planning which is used for demand forecasting, replenishment & manufacturing tools for accurate planning and scheduling of activities.
3. P&G distributing company and Saber decision Technologies resulted in a software system called Transportation Network optimization for streamlining the bidding and award process.
4. Logility planning solution was recently introduced to provide a programme capable managing the entire supply chain.

### **ELECTRONIC COMMERCE:**

It is the term used to describe the wide range of tools and techniques utilized to conduct business in a paperless environment. Electronic commerce therefore includes electronic data interchange, e-mail, electronic fund transfers, electronic publishing, image processing, electronic bulletin boards, shared databases and magnetic/optical data capture. Companies are able to automate the process of moving documents electronically between suppliers and customers.

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**ELECTRONIC DATA INTERCHANGE:**

Electronic Data Interchange (EDI) refers to computer-to-computer exchange of business documents in a standard format. EDI describe both the capability and practice of communicating information between two organizations electronically instead of traditional form of mail, courier, & fax. The benefits of EDI are:

1. Quick process to information.
2. Better customer service.
3. Reduced paper work.
4. Increased productivity.
5. Improved tracing and expediting.
6. Cost efficiency.
7. Competitive advantage.
8. Improved billing.

Though the use of EDI supply chain partners can overcome the distortions and exaggeration in supply and demand information by improving technologies to facilitate real time sharing of actual demand and supply information.

**BAR CODING AND SCANNER:**

Bar code scanners are most visible in the checkout counter of super market. This code specifies name of product and its manufacturer. Other applications are tracking the moving items such as components in PC assembly operations, automobiles in assembly plants.

**DATA WAREHOUSE:**

Data warehouse is a consolidated database maintained separately from an organization's production system database. Many organizations have multiple databases. A data warehouse is organized around informational subjects rather than specific business processes. Data held in data warehouses are time dependent, historical data may also be aggregated.

**ENTERPRISE RESOURCE PLANNING (ERP) TOOLS:**

Many companies now view ERP system (eg. Baan, SAP, People soft, etc.) as the core of their IT infrastructure. ERP system have become enterprise wide transaction processing tools which capture the

data and reduce the manual activities and task associated with processing financial, inventory and customer order information. ERP system achieve a high level of integration by utilizing a single data model, developing a common understanding of what the shared data represents and establishing a set of rules for accessing data.

### IN SC AND RELATED AREAS ICT BRING THE FOLLOWING BENEFITS

- Internet, as global communication network
- provides infrastructure for communications of SC participants, provides platform for Internetbased applications which execute (SC) business processes
- provides new distribution channel (for digital goods)
- provides platform for efficient form of e-procurement (e-procurement on e-markets)
- enables new ways of cooperation (e.g. collaborative planning - e.g. CPFR)
- enables provision of new global information services (e.g. for SC - e-procurement product catalogs)
- enables faster and easier collaboration of SC participants. E.g. daily collaboration of SC participant using Internet could lead to business benefits e.g. reduced inventory levels and reduced cycle times throughout SC.
- supports (two -way) customer interaction
- implementation of Internet-based (Web) customer interfaces often enables to enter new markets
- simplifies implementation of SC improvements (e.g. VMI - Vendor managed Inventory)
- new breed of application software provides support for required functionality of SC and for many new improvements in this area (e.g. continuous inclusion of SC support into ERP, APS software) integration and coordination among SC members in following four areas , which represent escalating degree of integration and coordination
- **information integration** - i.e. sharing of information among members of SC. E.G. e-hub. By sharing customer demand data SC participants can reduce forecasting errors and in this way to reduce inventory, improve plant utilization and increase on-time deliveries.
- **planning synchronization** - i.e. joint design and execution of plans for product introduction, forecasting and replenishment based on exchange of knowledge between SC partners. E.g. coordination of production and delivery plans of SC participants contributes to reduced inventories and lower costs. CPFR (Collaborative Planning, Forecasting and Replenishment) process is a good example. Using Internet-based collaboration SC participants collaborate, share information (forecasts, variations, ideas) and finally arrive at joint plan for going to market, sales forecasts and order forecast and collaborate further on delivery execution.

- **workflow coordination** - i.e. coordination, integration and automatization of business processes (workflow) in SC, e.g. e-procurement, engineering change
- **new business models** - i.e. new approaches to conducting business, e.g. customer support – using Internet applications (Web)- for (software) product upgrades.

Several approaches, with various degrees of perfection, are available in each of areas given above.

E.g. for information integration and sharing the following approaches are available

- sending info between individual SC participants (e.g. by e-mail)
- access to partner's info (located in partner's database)
- access to partner's info in real-time
- access to partner's info via e-hub

As important CSF (Critical Success Factors) for practical implementations - trust and privacy, security and arriving to win-win solution (for all SC participants from long time perspective) are often quoted.

## CONCLUSION:

The main aim of this paper is to show, in the form of overview, how modern ICT, Electronic Commerce and Electronic Business influence and support Supply chain management. The traditional way of managing supply chains has changed dramatically over the last decade. Face-to-face management, manual tracking systems, paper-dominated order processing systems, and wired communication links were the primary management tools available to supply chain managers.. World is shrinking day by day with advancement of technology. Customers' expectations are also increasing and companies are prone to more and more uncertain environment. Companies will find that their conventional supply chain integration will have to be expanded beyond their peripheries. The strategic and technological innovations in supply chain will impact on how organizations buy and sell in the future. However clear vision, strong planning and technical insight into the Internet's capabilities would be necessary to ensure that companies maximize the Internet's potential for better supply chain management and ultimately improved competitiveness. Internet technology, World Wide Web, electronic commerce etc. will change the way a company is required to do business. These companies must realize that they must harness the power of technology to collaborate with their business partners. That means using a new breed of SCM application.

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# SENSITIZATION FOR SUSTAINABILITY, WITH SPECIAL REFERENCE TO THE TOURISM IN THE ANTICHAK VILLAGE OF BIHAR, INDIA.

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## **ABSTRACT**

*Sensitization is a process of being sensitized. This word was originally coined in photography in the year, 1862. As per the American Heritage Stedman dictionary, Sensitization means to sharpen or refine.*

*Sustainability is the ability to continue a defined behavior indefinitely. Sustainability refers to the quality of not being harmful to the environment or depleting natural resources, and thereby supporting long term ecological balance.*

*Weaver and Opperman (2000) defined tourism as "sum of the phenomena and relationship arising from the interaction among tourists, business suppliers, host governments, host communities, origin governments, universities, community colleges and non-governmental organizations, in the process of attracting, transporting, hosting and managing these tourists and other visitors".*

*Antichak (Latitude. 25 15" North; Longitude 87 25" East) is a village near Kahalgaon Railway station of eastern railway, in Bhagalpur district of Bihar. Formerly, it was part of West Bengal. Holy River Ganges flows to the north of the village. About 2 km to the south, of Antichak lies the Govardhana hill. To the East and West direction of the village, lies Lallapur and Madhorampu village respectively. Post office of the Antichak is known as Patharghata. The Patharghata is an ancient site having sculptures carved in rock and rock-cut caves belonging to the Gupta period. Antichak is known for tourism, due to the ancient seat of education- Vikramshila Mahavihar, an archaeological site.*

*This paper aims at sharpening the continuous growth of tourism at Antichak village. The objective of the study is to: Assess the various components of environment/sustainability, where immediate attention towards sensitization for sustainability is required; Identify the potential source (organizations, group and/or individuals) whosoever can be sensitized towards sustainability for effective result; Find out the various methods (ways) of sensitization for long lasting effect on sustainability.*

*This research work is based on various secondary sources, Government reports, Interviews of the focus groups at various organizations. Interviews were conducted on the basis of structured questionnaire. The paper consists of Abstract, Key words, Introduction, Objectives, Literature review, Methodology, Findings, Conclusion, Suggestions, and References.*

**KEYWORDS** *Sensitization, Sustainability, Tourism, Environment, Antichak.*

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## INTRODUCTION

**“Give light and people will find the way”.**

**Ella Baker**

Environment is matter of concern for each and every human being present on this planet. It is observed that many individuals such as local senior citizens, students, professionals, who are well educated, have strong desire to play a significant role in environment management in and around their neighborhood. But, due to various reasons these individuals despite their enlightened background, are not in a position to appreciate significant environmental issues.

Therefore, in the present day situation, it is the demand of the hour to: pass on the correct information to the people, on the local, national and international environmental issues; sensitize the professionals, academicians and other members of society on sustainability, who can play an active part in opinion making within the society, so that corrective environmental action could be encouraged.

Sensitization is an attempt to make oneself or others aware of and responsive to certain ideas, situations, or phenomenon. As per the American Heritage dictionary (William.1969), Sensitization means to sharpen or refine. Sensitization addresses the needs of all sectors of the society.

The business.com dictionary defines sensitization as the attempt to make one or others aware of and responsive to certain ideas, events, situation, or trend. Sensitization is a process by which the community is made to be aware of and be responsive to certain ideas, events, situations or experiences. It is required to sensitization the local people in order to - address serious problems; bring about behavioral and attitude change and build relationships between various organizations, local people and tourists. Sensitization is long term –awareness, behavioral change, ownership, and partnerships.

Sustainability is the ability to continue a defined behavior indefinitely. Sustainability refers to the quality of not being harmful to the environment or depleting natural resources, and thereby supporting long term ecological balance. Joseph Hulse (2005) in his book Sustainable Development, learning from the past writes – 'Sustainable' can be literally interpreted as an unchanging state or condition, actions taken to prevent a system or entity from collapsing.

World Tourism Organization (1994), defined tourism as "the activity of persons travelling to and staying in places outside their usual environment for not more than one consecutive year for leisure, business



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and other purposes not related to the exercise of an activity remunerated from within the place visited".

Weaver and Opperman (2000) defined tourism as "sum of the phenomena and relationship arising from the interaction among tourists, business suppliers, host governments, host communities, origin governments, universities, community colleges and non-governmental organizations, in the process of attracting, transporting, hosting and managing these tourists and other visitors".

Antichak is a village in Kahalgaon sub-Division of the Bhagalpur district in Bihar, India. This village is located at the latitude of 25° 15' North; longitude of 87° 05' East. The nearest railway station to the Antichak village is Vikramshila railway station, which is meant for the halt-age of some local trains only. However, Main railway station of the site is Kahalgaon railway station (which is located on the Howrah Kailash loop line of Eastern Railway). Other well known railway station on the route is Sahibganj, Bhagalpur, Jamalpur, and others. The post office of the village is known as Patharghata post office. Antichak is situated on the bank of river Ganges. The river takes a turn towards North at this place, which is considered to be very holy as per the Hindu religion. Kosi River also flows very near to this Village. Patharghata is an ancient site having sculptures carved in rock and rock-cut caves belonging to the Gupta period (Diwakar. 2001).

This village came to the limelight in nineteen eighty (1980) as the ruins of an ancient university was discovered by Dr B.S Verma, Superintending Archeologist of Archaeological Survey of India (Sinha.1974), Patna circle in Bihar, India. According to him, this ancient seat of quality education was situated at Antichak Village, Kahalgaon, Bagalpur District. This site is said to be a sister institution of Nalanda (Verma.2011) and was said to have been founded by a monk called Kamapala, under the patronage of King Dharmapala in AD 770-810. The King granted land-endowments for its upkeep and later on it became one of the famous universities of the period. Hence the importance of the site may be established and proper sustainable growth of the place must be ensured for our prospering future.

## **OBJECTIVE**

The objective of the study is to:

- Assess the various components of environment/sustainability, where immediate attention towards sensitization for sustainability is required.
- Identify the potential source (organizations, group and/or individuals) whosoever can be sensitized towards sustainability for effective result.
- Find out the various methods (ways) of sensitization for long lasting effect on sustainability.



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## LITERATURE REVIEW

Jim Kraus (2012), Ella Baker quotes "Give light and people will find the way".

Ikedinachi Ogamba, (November, 2015) writes that the concept of sustainability is based on the fundamental inter-dependence between human and natural systems. The environment represents the natural world, including animals and plants, mineral deposits, soil, water, and air. The economy comprises activities that provide products and services to people. These include manufacturing, agriculture, mining, power generation, drinking water treatment, wastewater treatment, solid waste management, health care, construction, and commercial fishing and aquaculture. Society represents people, their actions, and their quality of life. This includes human health and well-being, government and other institutions, buildings, transportation and utility infrastructure, and recreation.

Brundtland Commission (World Commission on Environment and Development, 1987) in its report, 'Our Common Future', defined sustainable development as "development that meets the needs of the present generation without compromising the ability of future generations to meet their own needs.

Mark Deakin, Gordon Mitchell, Peter Nijkamp and Ron Vreeker (2007) ; Daly defined sustainable development in the year 1991 as one that satisfies three basic conditions: (1) Its rates of use of renewable resources do not exceed their rates of regeneration; (2) Its rates of use of non-renewable resources do not exceed the rate at which sustainable renewable substitutes are developed; (3) Its rates of pollution do not exceed the assimilative capacity of the environment.

Serenity Centre (Uganda, East Africa) the biggest challenge encountered in such programme is inadequate financial resources to extend services of sensitization and awareness.

Santanu Mishra (11 October, 2015) "As the CSR (Corporate Social Responsibility) spending is still not completely mandatory for the corporate yet, we expect a surge in the coming years when companies start witnessing the changes that start taking place at the grassroots levels. He noted that "there is also a need for greater sensitization for the companies to give back to the society and building positive and sustainable social changes that can also have business dividends." Under the new companies' law, certain class of profitable entities is required to shell out at least 2% of their three-year annual average net profit towards the Corporate Social Responsibility activities. The first year of implementation was financial year -April 2014-March 2015.

A report on environmental sensitisation and information campaign for primary and secondary school teachers and traditional authorities and other leaders in the Kepere Deng Deng carried out by global village Cameroon. (November, 2006), says, for them (the local community) to live in harmony with nature, they do not need again to consider themselves as conquerors of nature but as part of the ecosystem. This was aimed at bringing up the young generation in such a way that they do not engage in the same activities that the older generation of the region have been carrying out which have caused untold torment and hardship. Community sensitization and mobilization(<http://www.rho.org/ap/ap-implement-sensitization.htm>).In sensitizing communities, trusted authorities and community members should be engaged to disseminate information and counteract rumours. Among these trusted individuals are teachers, who can play an important role in educating families. Make a schedule of Stakeholder and their role and responsibilities.

Human–Environment Interaction is all about the interplay between humans and their physical settings (Ikedinachi Ogamba, 2015). It is the inter-relationships between the physical environment and human behavior. It involves studying of the transactions between people and their surroundings.

Communication strategy for the quality of care initiative (Disha Project, April 2001) the first integral part of the Communication Strategy is the sensitization of various audiences about the issues.

## **METHODOLOGY**

### **Primary Sources:**

- Various reports were referred.
- Interview were conducted for:
  - Tourist
  - Local people and
  - Focus group

### **Secondary sources:**

Books, Journals and other secondary sources were referred in various libraries

### **Sample Unit:**

- Tourist
- Local people and
- Focus group

**Sample Size:**

- Tourist: 33
- Local people 71
- Focus group 11

**Tools for collecting data:**

The Tool that was used to collect the data is questionnaire. Three type of questionnaire were prepared, one for the focus group, second for the local public and third for the focus group.

**Mode of collection Data:**

- Face to face interview
- Telephonic interview
- Some questionnaire were distributed and collected through the third party.

**FINDINGS**

In total 115 data were collected from tourist, local people and focus group. Out of which 33 were from Tourists, 71 were from the local people and 11 were from the focus group. Data analysis was done manually. The data analysis has been presented in the form of columnar chart/ tables. Responses to the open ended questions are listed in sentences below, at the end of the tables.

**Table No.1. Age group of respondents.**

S.No	Age Group	Total No	Percentage	Total No	Percentage	Total No	Percentage
	( In Years)						
		<b>TOURISTS</b>		<b>LOCAL PEOPLE</b>		<b>FOCUS GROUP</b>	
1	Below 20	14	42.42	23	32.39	-	-
2	21-40	10	30.3	21	29.57	02	18.81
3	41-60	07	21.21	16	22.53	05	45.45
4	61 and above	02	6.06	11	15.49	04	36.36

**Table No.2. Gender of the respondents.**

Sl No	Gender	Respondent	Percentage	Respondent	Percentage	Respondent	Percentage
		<b>TOURISTS</b>		<b>LOCAL PEOPLE</b>		<b>FOCUS GROUP</b>	
1	MALE	23	69.69	47	66.19	11	100
2	FEMALE	10	30.3	24	33.8	-	-

**Table No.3. Important Component of Sensitization for Sustainability**

Sl No	Component / Concept of sensitization for sustainability consider to be most important	Total No	Percentage	Total No	Percentage	Total No	Percentage
		<b>TOURISTS</b>		<b>LOCAL PEOPLE</b>		<b>FOCUS GROUP</b>	
1.	The environment	26	78.78	47	66.19	11	100
2.	The economy	01	03.03	09	12.67	-	-
3.	Society	04	12.12	11	15.49	-	-
4.	Socio economic status of the society	02	06.06	04	05.63	-	-

**Table No.4. Factors of the environment that needs immediate attention**

Sl No	Factors of the environment needs immediate attention	Total No	Percentage	Total No	Percentage	Total No	Percentage
		<b>TOURISTS</b>		<b>LOCAL PEOPLE</b>		<b>FOCUS GROUP</b>	
1.	Soil (Solid Waste Management / Cleanliness)	21	63.63	55	77.46	07	63.63
2.	Water (Water Conservation)	07	21.21	08	11.26	02	18.18
3.	Air (Pollution from vehicle)	04	12.12	05	07.04	02	18.18
4.	Noise Pollution (From vehicle / loud speakers)	01	03.03	03	04.22	-	-

**Table No.5 Immediate attention for cleanliness in and around the site**

Sl No	Immediate attention for cleanliness in and around the site	Total No	Percentage	Total No	Percentage	Total No	Percentage
		<b>TOURISTS</b>		<b>LOCAL PEOPLE</b>		<b>FOCUS GROUP</b>	
1.	Cleanliness of sewer / drainage	04	12.12	09	12.67	02	18.18
2.	Effectiveness of garbage collection and disposal system	17	51.51	37	52.11	06	54.54
3.	Cleanliness of public conveniences	05	15.15	13	18.30	01	09.09
4.	Cleanliness in and around the site (Ambience)	07	21.21	12	16.90	02	18.18

**Table No.6 The Potential source for playing major and effective role in sensitization for sustainability at Antichak is**

Sl No	The Potential source of group / organization, who can play major and effective role in sensitization for sustainability at <u>Antichak</u>	Total No	Percentage	Total No	Percentage	Total No	Percentage
		TOURISTS		LOCAL PEOPLE		FOCUS GROUP	
1.	Teacher	16	48.48	43	60.56	06	54.54
2.	Tourist	04	12.12	09	12.67	02	18.18
3.	Local Clubs / Organizations	11	33.33	11	15.49	03	27.27
4.	Professionals / well educated local people	02	06.06	08	11.26	-	-

**Table No.7 The potential source of individuals, who can practice and play a major and effective role in sensitization for sustainability at Antichak**

Sl No	The potential source of individuals who can practice and play major and effective role in sensitization for sustainability at <u>Antichak</u>	Total No	Percentage	Total No	Percentage	Total No	Percentage
		TOURISTS		LOCAL PEOPLE		FOCUS GROUP	
1.	Youth / Higher secondary Students	09	27.27	22	30.98	01	09.09
2.	Women	11	33.33	15	21.12	03	27.27
3.	Senior Citizen	05	15.15	11	15.49	02	18.18
4.	Primary and secondary students	08	24.24	23	32.39	05	45.45

**Table No.8 Most appropriate way of sensitization for sustainability at Antichak**

Sl No	Most appropriate way of sensitization for sustainability at <u>Antichak</u>	Total No	Percentage	Total No	Percentage	Total No	Percentage
		TOURISTS		LOCAL PEOPLE		FOCUS GROUP	
1.	Conducting Workshops / seminars	06	18.18	11	15.49	03	27.27
2.	Educating Teachers to sensitize students	12	36.36	27	38.02	05	45.45
3.	Awareness among local people other than students	10	30.30	23	32.39	02	18.18
4.	Educating various NGOs	05	15.15	10	14.08	01	09.09

**The response of the focus group to the open question:**

1. Which are the appropriate channels for sensitization?
  - Radio programmes
  - Television
  - Literature

- Focus group discussions
- Meetings
- Awareness talks
- Door-to-door campaigns
- Outdoor advertising
- Street shows / Drama

## 2. What would be the Benefits of sensitization?

- Enhances active participation from community
- Increases understanding and public knowledge
- Enhances social skills and competencies for change
- Enhances stakeholder partnerships
- Captures the public's attention
- Community makes informed decisions
- Brings about confidence

## 3. What are the major challenges to implement these programmes?

- Fund / Finance
- Willingness of local people
- Willingness of government
- Willingness of NGO's /Clubs

## 4. Any other view, please specify-

- If any person has inclination towards painting, they could express their impressions about nature – its components like wind, water, energy, plant life, birds, animals, landscape and so on, through this medium. The sensitive nature of artists can perceive the details that are missed by many.
- Some people are interested in writing poetry or making a collection of environment related poems, this is another area to reflect perceptions pertaining to different environmental issues and problems and even their solutions.
- In this era of mobile phones with high end camera in general and professional camera in particular, it gives ample opportunity of Photography to the human beings, a collection of such photographs with their brief write-ups can be covered in news paper or magazine as articles. Some exhibitions can also be organized by these photographers.

- 
- Review of a book on environment is another area. A book can be chosen from the libraries or from the newspapers or journals that regularly apprise readers about the newly published books in the area of environment.
  - Planting of species with important ecosystem functions
  - Selective plantation of native species that augment and attract bio-diversity
  - Planting of species according to the utility requirements, i.e., dust absorbing, noise absorbing, gaseous pollutant absorbing, bio-diversity enhancing, carbon buffer and aromatic plant species

## CONCLUSION

Sensitization is very vital in making any awareness programme a successful. Environment sustainability is Everyone's Business. The study reveals that most important component considered for sensitization for sustainability at Antichak is environment. Under environment, Solid Waste Management and Cleanliness of public conveniences and sewer / drainage needs immediate attention for sensitization. Teachers/ Academicians are identified as the trusted authorities, who can play major role in disseminating information and counter act rumours. Women are considered as individuals with very high Potential, who can sensitize effectively in every stages of life. Stake holders must be involved actively and preparation of schedule of Stakeholder and their role and responsibilities must be ensured by the government. Communication strategy is very vital and it can be of great help in carrying out the sensitization programme at Antichak.

The Benefits of sensitization are -Enhances active participation from community; Increases understanding and public knowledge; Enhances social skills and competencies for change; Enhances stakeholder partnerships; Captures the public's attention; Community makes informed decisions; Brings about confidence. But, major challenges to implement these programmes are Fund / Finance; Willingness of local people; Willingness of government; Willingness of NGO's / local Clubs.

Sensitization for sustainability can also be carried-out in the form of painting, as the sensitive nature of artists can perceive the details that are missed by many. Writing poetry or making a collection of environment related poems could be still another way of achieving goal. Collection of such photographs with their brief write-ups can be covered in news paper or magazine as articles. Planting of species according to the utility requirements, i.e., dust absorbing, noise absorbing, gaseous pollutant absorbing; bio-diversity enhancing, carbon buffer and aromatic plant species is one of the best way to protect our environment.

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# GROWTH PATTERN OF FDI IN INDIA WITH REFERNCE TO COUNTRY WISE, SECTOR WISE, OR REGION WISE

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## **ABSTRACT**

*Globalization and Foreign Direct Investment (FDI) is playing an important role in the development of developed, developing as well as underdeveloped economies. The reasons are simple like introduction of new products, new skills, easy approachable markets and modern technology to the host countries. Every country around the world is playing a important role in the encouragement of foreign and overseas investors and their investments. India is being ranked as the second most favored destination for foreign investments after China by showing a growth year after year. The main objective of the study is to examines the trends and growth patterns in the foreign direct investment (FDI) across different sectors and from different countries in India during 2000-10.*

**Key words:** *FDI (foreign Direct investment), inward investment, equity inflows.*

## **INTRODUCTION**

Foreign investment refers to investments made by the residents of a country in the financial assets and production processes of another country. The foreign investment, however, varies from country to country. It place a very important role to enhance the factor productivity & B.O.P. of the recipient country Foreign investment provides a channel through which countries can gain access to foreign capital.

It can come in two forms:

- foreign direct investment (FDI) and
- foreign institutional investment (FII).

Foreign direct investment involves in direct production activities and is also of a medium- to long-term nature. But foreign institutional investment is a short-term investment, mostly in the financial markets.

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FII, given its short-term nature, can have bidirectional causation with the returns of other domestic financial markets such as money markets, stock markets, and foreign exchange markets.

## **FOREIGN DIRECT INVESTMENT: INDIAN SCENARIO**

**Foreign Direct Investment (FDI) is permitted as under the following forms of investments –**

- Through financial collaborations.
- Through joint ventures and technical collaborations.
- Through capital markets via Euro issues.
- Through private placements or preferential allotments.

### **Forbidden Territories –**

FDI is not permitted in the following industrial sectors:

- Arms and ammunition.
- Atomic Energy.
- Railway Transport.
- Coal and lignite.
- Mining of iron, manganese, chrome, gypsum, sulphur, gold, diamonds, copper, zinc.
- Retail Trading (except single brand product retailing).
- Lottery Business
- Gambling and Betting
- Business of chit fund
- Trading in Transferable Development Rights (TDRs).
- Activity/sector not opened to private sector investment.

### **FOREIGN INVESTMENT THROUGH GDRS (EURO ISSUES) –**

Indian companies are allowed to raise equity capital in the international market through the issue of Global Depository Receipt (GDRs). GDR investments are treated as FDI and are designated in dollars and are not subject to any ceilings on investment. An applicant company seeking Government's approval in this regard should have consistent track record for good performance (financial or otherwise) for a minimum period of 3 years. This condition would be relaxed for infrastructure projects such as power generation, telecommunication, petroleum exploration and refining, ports, airports and roads.

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## **FDI AND REGULATORY FRAMEWORK**

Foreign Direct Investment in India is subject to policy guidelines framed by the Government of India from time to time in accordance with its Industrial Policy. The year 1991 saw a major liberalisation in the policy by way of the Automatic Route in terms of which cases concerning foreign collaboration in respect of certain priority industries and involving not more than 51 per cent of foreign equity were allowed by the RBI without a reference to the Government of India. After 1991, certain more areas of foreign investments were opened up such as issuance of global depository receipts (GDRs) and investment by foreign institutional investors (FIIs). FDI comes through

- a) Automatic route and
- b) Govt. approval route.

In terms of the guidelines issued in February 2000 and subsequent amendments, except in certain circumstances, foreign investment by way of issue of shares/convertible debentures by Indian companies can be made in India under the Automatic Route without any approval from the Government of India or the Reserve Bank of India (RBI). In the circumstances where the Automatic Route is not applicable, the foreign investor or the Indian company seeking foreign investment would require the approval of the Foreign Investment Promotion Board (FIPB).

### **AUTOMATIC ROUTE**

Under the RBI's Automatic Route, the Indian companies can issue shares up to prescribed percentage to persons resident outside India without obtaining prior permission either of the Government or RBI. These companies must be engaged in the permissible activities under the FEMA. Companies engaged in manufacture of items reserved for SSI sector or those manufacturing items requiring industrial license or engaged in areas such as, defence, atomic energy or aerospace will not be able to avail of the Automatic Route.

### **GOVT. ROUTE (APPROVALS BY SIA/FIPB)**

Indian companies may want to issue shares to foreign citizens and companies incorporated outside India and such issuances may not be allowed under the Automatic Route or any other general/special permissions. In such cases, it will be necessary to apply to the Foreign Investment Promotion Board (FIPB). Approvals are granted by FIPB on a case-by-case basis. The Reserve Bank has granted general permission to Indian companies for issue and export of shares/securities to foreign investors to acquire such shares in respect of such investments approved by SIA/FIPB.

## LITERATURE REVIEW

Review of various literatures available on FDI reveals that foreign investment is still a matter of debate. Whether FDI is boom or bane for host countries economic growth and development? Opinions are still divided. FDI has its own advantages and disadvantages. Many scholars argue that through FDI developed nations may try to invade the sovereignty of host country. In order to earn quick profit they may exploit the natural resources at the faster rate and thus leave the host country deprived in the long run. It has been feared that FDI is a big threat to survival of domestic players. Many are of the opinion that basic objective of foreign investments is to earn profits by ignoring the overall social & economic development of the host nation. Thus, through this section an attempt has been made to discuss various issues raised by different scholars on the subject.

It is universally acknowledged that FDI inflow offers many benefits to an economy. UNCTAD (1999) reported that Transnational Corporations (TNCs) can complement local development efforts by (i) increasing financial resources for development; (ii) boost export competitiveness; (iii) generate employment and strengthening the skill base; (iv) protecting the environment to fulfill commitment towards social responsibility; and (v) enhancing technological capabilities through transfer, diffusion and generation. However, Te Velde, (1999) has rightly reported that in the absence of pro-active government policies there are risk that TNCs may actually inhibit technological development in a host country. Borensztein, et. al. (1998) reveals that FDI has a net crowding in effect on domestic private and public investment thus advancing overall economics growth. Crowding in effects of FDI varies with regions. There has been strong evidence of crowding-in in Asia and strong net crowding out effect in Latin America (Agosin and Mayer, 2000).

By and large, studies have found a positive links between FDI and growth. However, FDI has comparatively lesser positive links in least developed economies, thereby suggesting existence of “threshold level of development” (Blomstrom and Kokka, 2003 and Blomstrom et. al., 1994). Athreye and Kapur (2001) emphasized that since the contribution of FDI to domestic capital is quite small, growth-led FDI is more likely than FDI-led growth. Dua and Rasheed (1998) indicted that the Industrial production in India had a unidirectional positive Granger-Casual impact on inward FDI flows. They also concluded that economics activity is an important determinant of FDI.

UTMS Journal of Economics, Vol. 1, No. 2, pp. 1-16, 2010 M. Shamim Ansari, M. Ranga: INDIA'S FOREIGN DIRECT INVESTMENT: CURRENT STATUS...Inflows in India and not vice-versa. Tseng and Zebregs (2002) reported that even in case of China causality between market size/growth and magnitude of FDI holds true. There is global race for attracting FDI, but how much it would contribute

to host country's economics development is to be assessed. Developing countries need to have reached a certain level of educational, technological and infrastructure development before being able to benefit from a foreign presence in their markets. Blomstrom et. al., (1994) have rightly observed that, the host country must be capable of absorbing the new technology manifested in FDI. An additional factor that may prevent a country from reaping the full benefits of FDI is imperfect and underdeveloped financial markets (OECD 2002). India appears to be well placed in terms of reaping benefits because it has relatively well developed financial sector, strong industrial base and S such investments approved by SIA/FIPB.

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

The objectives of the study are:

1. To study the country-wise, sector-wise or geographically wise FDI inflows in India.
2. To examines the trends and growth patterns in the foreign direct investment (FDI) across different sectors and from different countries in India during 2000-10.

### **METHODOLOGY OF THE STUDY:-**

The study is based on secondary data and the facts and figures collected from various sources such as Fact Sheets on FDI, Department of Industrial Policy and Promotion (DIPP), Ministry of Commerce and Industry, Government of India(GOI).

### **SCOPE AND LIMITATIONS OF THE STUDY:-**

The study is confined to Country-wise, Sector-wise, Region-wise flows of FDI in India and cumulative FDI inflows have been taken for the purpose of analysis.

### **GROWTH PATTERN OF FDI IN INDIA:-**

#### **COUNTRY-WISE FDI**

Various studies have projected India among the top 10 favoured destination for FDI. Cumulative FDI equity inflows has been 1,26,450 Million US\$ for the period 2000-2010. This is attributed to contribution from service sector, computer software, telecommunication, real estate etc. India's 80% of cumulative FDI is contributed by 10 countries while remaining 20 per cent by rest of the world. Country-wise, FDI inflows to India are dominated by Mauritius (42 percent), followed by the Singapore (9 per

cent), United States (7 percent) and UK (5 percent) (Table 1). Countries like Singapore, USA, and UK etc. invest in India mainly in service, power, telecommunication, fuels, electric equipments, food processing sector.

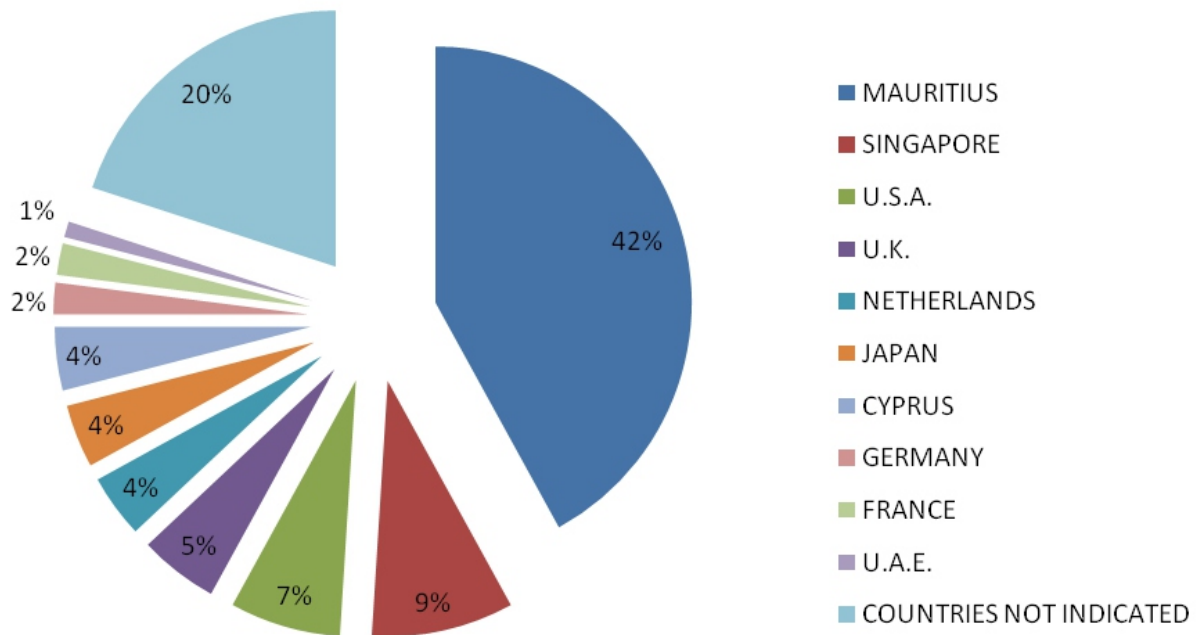
**Table 1:** Share of top investing countries FDI Equity Inflows

In Amount (US\$ in million)

<i>Ranks</i>	<i>Country</i>	<i>Cumulative Inflows (April '00 - Dec. '10)</i>	<i>%age to total Inflows (in terms of US \$)</i>
1.	MAURITIUS	(52,986)	42 %
2.	SINGAPORE	(11,639)	9 %
3.	U.S.A.	(9,333)	7 %
4.	U.K.	(6,359)	5 %
5.	NETHERLANDS	(5,503)	4 %
6.	JAPAN	(4,906)	4 %
7.	CYPRUS	(4,532)	4 %
8.	GERMANY	(2,910)	2 %
9	FRANCE	(2,215)	2 %
10.	U.A.E.	(1,870)	1 %
11.	COUNTRIES NOT INDICATED	(24197)	20%
<b>TOTAL FDI INFLOWS</b>		<b>(126450)</b>	<b>100%</b>

**Source :** Ministry of commerce & industry Department of Industrial Policy & Promotion

Chart Title



### SECTOR-WISE FDI INFLOWS:-

Sector-wise classification of FDI is essential to understand better structure and direction of foreign investment in the country. Service sector has been the highest contributor of FDI inflow to India (21%) followed by compute software and hardware (8%), telecommunication (8%), housing and real estate (7%), construction activities and power (7%), (Table 2).

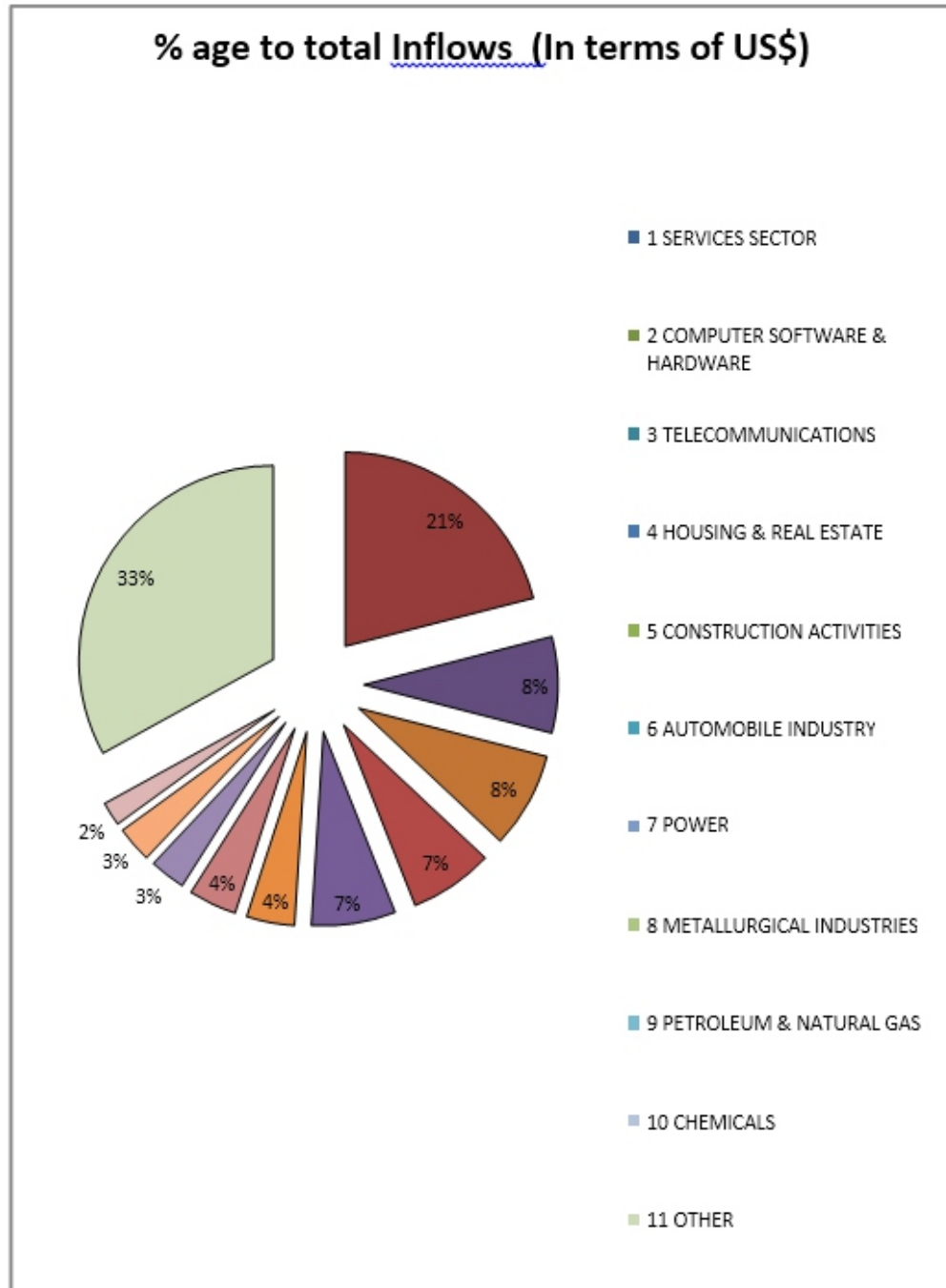
### (Table 2).SECTORS ATTRACTING HIGHEST FDI EQUITY INFLOWS:

Amount ` (US\$ in million)

<i>Ranks</i>	<i>Sector</i>	<i>Cumulative Inflows (April '00 - Dec. '10)</i>	<i>% age to total Inflows (In terms of US\$)</i>
1.	<b>SERVICES SECTOR</b> (financial & non-financial)	(26,454)	21 %
2.	<b>COMPUTER SOFTWARE &amp; HARDWARE</b>	(10,601)	8 %
3.	<b>TELECOMMUNICATIONS</b> (radio paging, cellular mobile, basic telephone services)	(10,258)	8 %

4.	HOUSING & REAL ESTATE	(9,380)	7 %
5.	CONSTRUCTION ACTIVITIES (including roads & highways)	(8,964)	7 %
6.	AUTOMOBILE INDUSTRY	(5,662)	4 %
7.	POWER	(5,656)	4 %
8.	METALLURGICAL INDUSTRIES	(4,105)	3 %
9.	PETROLEUM & NATURAL GAS	(3,207)	3 %
10.	CHEMICALS (other than fertilizers)	(2,849)	2 %

Source : Ministry of commerce & industry Department of Industrial Policy & Promotion





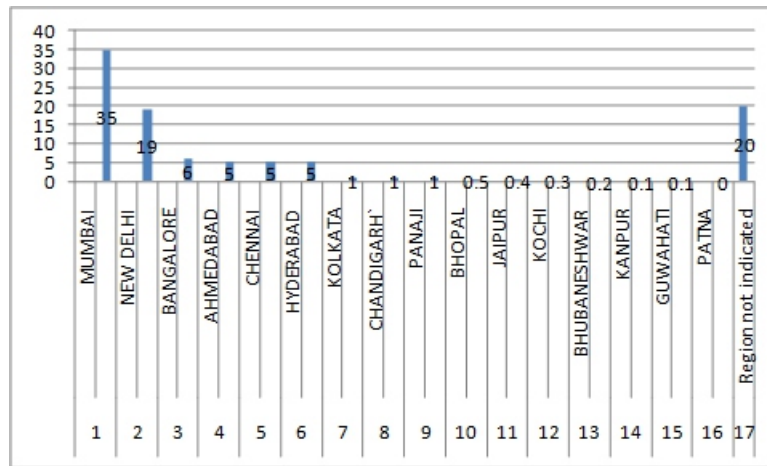
**GEOGRAPHICAL DISTRIBUTION OF FDI INFLOWS:-**

Balanced geographical distribution of FDI inflows could have been instrumental in achieving sustainable growth. However, there seems to wide concentration of FDI inflows around Mumbai Region (35%) followed by New Delhi Region (19%), Karnataka (6%), Gujarat (6 %), Tamil Nadu (5%) and Andhra Pradesh (4%), (Diagram 3). It is alarming that these regions receive 77% of FDI equity inflow while rest of India accounts for only 23% due to lack of proper initiative from the various state governments. These states are responsible for wide disparities of foreign investments & also backward in terms of skilled manpower and infrastructure.

**STATEMENT ON RBI'S REGIONAL OFFICES (WITH STATE COVERED) RECEIVED FDI EQUITY INFLOWS<sub>1</sub>****(from April 2000 to December 2010):**

S. No.	RBI's - Regional Office <sub>2</sub>	State covered	Cumulative Inflows	%age to total
			(April '00 – Dec. '10)	Inflows (in terms of US\$)
1	MUMBAI	MAHARASHTRA, DADRA & NAGAR HAVELI, DAMAN & DIU	-44,214	35
2	NEW DELHI	DELHI, PART OF UP AND HARYANA	-24,571	19
3	BANGALORE	KARNATAKA	-8,023	6
4	AHMEDABAD	GUJARAT	-6,859	5
5	CHENNAI	TAMIL NADU, PONDICHERRY	-6,621	5
6	HYDERABAD	ANDHRA PRADESH	-5,739	5
7	KOLKATA	WEST BENGAL, SIKKIM, ANDAMAN & NICOBAR ISLANDS	-1,479	1
8	CHANDIGARH <sup>1</sup>	CHANDIGARH, PUNJAB, HARYANA, HIMACHAL PRADESH	-912	1
9	PANAJI	GOA	-722	1
10	BHOPAL	MADHYA PRADESH, CHATTISGARH	-614	0.5
11	JAIPUR	RAJASTHAN	-514	0.4
12	KOCHI	KERALA, LAKSHADWEEP	-362	0.3
13	BHUBANESHWAR	ORISSA	-258	0.2
14	KANPUR	UTTAR PRADESH, UTTARANCHAL	-162	0.1
15	GUWAHATI	ASSAM, ARUNACHAL PRADESH, MANIPUR, MEGHALAYA, MIZORAM, NAGALAND, TRIPURA	-64	0.1
16	PATNA	BIHAR, JHARKHAND	-0.4	0
17	REGION NOT INDICATED <sub>3</sub>		-25,215	20

**Source : Ministry of commerce & industry Department of Industrial Policy & Promotion**



### FINANCIAL YEAR WISE FDI INFLOW DATA :-

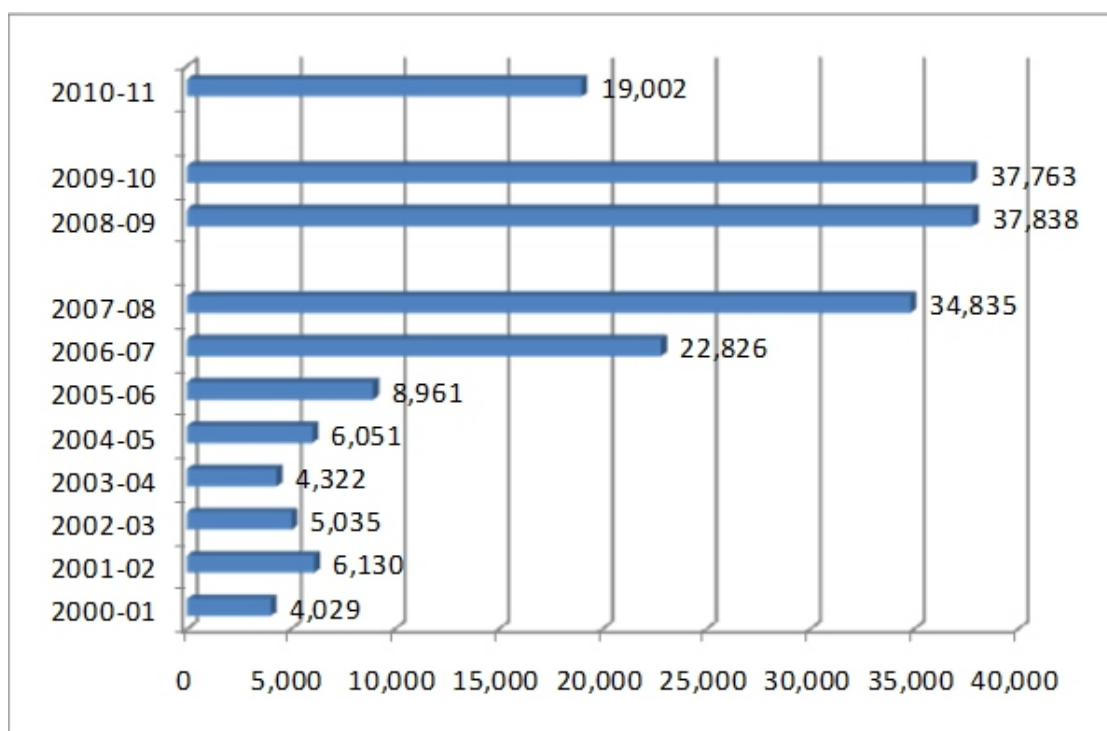
FIPB Route has been the most important source of FDI inflow for India and has been reported at cumulative 1,26,925 Million US\$ from april 2000 to nov.2010. However, due to liberalization in economic policy of the government other routes of FDI are also becoming popular. For the corresponding period FDI inflow of reinvested earning has been 46,395 Million US\$, which is about one-fourth of the total FDI inflow so far. This may be attributed to government initiatives of providing special tax benefits and other facilities for reinvestment of earnings.

Sources : RBI Bulletin Feb. 2011 dt. 10.02.2011

Diagram 1:

S. No.	Financial Year ( April – March )	FOREIGN DIRECT INVESTMENT ( FDI )						Investment by FII's institutions /Investors fund ( net )
		EQUITY		Re-investment	Other Capital	FDI inflows into India		
		FIPB Route/ RBI's Automatic Route / Acquisition Route	Equity Capital of un incorporated bodies #			Total FDI Flow	% age growth Over previous year ( in US \$ terms )	
1.	2000-01	2,339	61	1,350	279	4,029	--	1,847
2.	2001-02	3,904	191	1,645	390	6,130	(+) 52 %	1,505
3.	2002-03	2,574	190	1,833	438	5,035	(-) 18%	377
4.	2003-04	2,197	32	1,460	633	4,322	(-)14 %	10,918

5.	2004-05	3,250	528	1904,	369	6,051	(+) 40 %	8,686
6.	2005-06	5,540	435	2,760	226	8,961	(+ ) 48%	9,926
7.	2006-07	15,585	896	5,828	517	22,826	(+) 146 %	3,225
8.	2007-08	24,573	2,291	7,679	292	34,835	(+) 53 %	20,328
9.	2008-09	27,329	702	9,030	777	37,838	(+) 09 Y.	(-) 15,017
10.	2009-10	25,609	1,540	8,669	1,945	37,763	(-) 0.2%	29,048
11.	2010-11 ( up to Nov. 2010					19,002	-	31,007
CUMULATIVE TOTAL (from April 2000 to November 2010 )		126,925	7,303	46,395	6,169	186,792	-	101,850



Trends of FDI and FII in India have been cyclical for the period under study (Diagram 1). For the financial year 2008-09 FDI growth was only 9% while for the financial year 2009-10 FDI growth was negative i.e. (-0.2%) due to global financial crisis followed by world wide recession (Table 4). Global financial crisis led to excess pressure on international liquidity which was responsible for FII's movement to south. Gradually FII are gaining confidence in Indian economy with economic recovery world wide.

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**CURRENT SCENARIO AND RECENT CHANGES :-**

The FDI scenario in India is currently witnessing a gradual shift with liberalized reforms over last few years and an attractive investment climate making a positive impact on the inflow. With a steady increase in volume of FDI, India has attracted more than 125 countries till 2010 (29 countries in 1991) across the globe to invest in India making it upstage US in the list of top investment destinations in the world in the UNCTAD WIP Report.

There are certain factors which have played a pivotal role in taking India to the world. Demographics, suitable business climate, low man power costs along with availability of talented pool of resources are some of them. India also has certain advantages at the policy level. Collaboration with a local partner is not mandatory for making investment in India, repatriation of capital is easy and low cost, licenses granted can be used to operate from any part of the country. There is also better protection of IP rights simplification of laws and introduction of a uniform Goods and Service Tax and a soon to be introduce Direct Tax Code.

Investment into India could mostly follow the automatic route with no licenses or permissions required Investment in sectors that have caps such as single brand retail, private banking, insurance, stock exchange needs to be approved by Foreign Investment Promotion Board.

**CONCLUSION:**

The process of economic reforms which was initiated in July 1991 to liberalize and globalize the economy had gradually opened up many sectors of its economy for the foreign investors. A large number of changes that were introduced in the country's regulatory economic policies heralded the liberalization era of the FDI policy regime in India and brought about a structural breakthrough in the volume of the FDI inflows into the economy maintained a fluctuating and unsteady trend during the study period. It might be of interest to note that more than 50% of the total FDI inflows received by India during the period from 2000-2010 came from Mauritius and the USA. The main reason for higher levels of investment from Mauritius was that the fact that India entered into a double taxation avoidance agreement (DTAA) with Mauritius were protected from taxation in India. Among the different sectors, the electrical and equipment had received the larger proportion followed by service sector and telecommunication sector.

RBI regional office Mumbai had attracted 35% of total FDI inflow in India during this period which

indicates that Mumbai is a first preference being money capital of India.

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# The Brand Relationship Spectrum: The Key to the Brand Architecture Challenge

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## ABSTRACT

*The classic brand manager dealt with simple brand structures in part because he or she was faced with a relatively simple environment and simple business strategies. Today the situation is far different. Brand managers now face market fragmentation, channel dynamics, global realities, and business environments that have drastically changed their task. In addition, there is pressure to leverage brand assets because of the prohibitive cost of creating new brands. This set of challenges has created a new discipline called "brand architecture." A coherent brand architecture can lead to impact, clarity, synergy, and leverage rather than market weakness, confusion, waste, and missed opportunities. Brand architecture is an organizing structure of the brand portfolio that specifies brand roles and the nature of relationships between brands. This article introduces a powerful brand architecture tool, the "brand relationship spectrum." It is intended to help brand architecture strategists employ insight and subtlety to sub-brands, endorsed brands, and their alternatives. Sub-brands and endorsed brands can play a key role in creating a coherent and effective brand architecture.*

*The classic brand manager dealt with simple brand structures with few extensions, sub-brands, and endorsed brands in part because he or she was faced with a relatively simple environment and simple business strategies. Today the situation is far different. The brand managers now face market fragmentation, channel dynamics, global realities, and business environments that have drastically changed their task. In addition, there is pressure to leverage brand assets in part because of the prohibitive cost of creating new brands. To cope with these pressures and complexities, brand managers have had to create and manage brand teams that are often intricate and complex, involving multiple brands, aggressive brand extensions, and complex structures involving sub-brands and endorsed brands. This set of challenges has created a new discipline that can be labeled "brand architecture" because it deals with relationships and structures not unlike those facing an architect who must design the structure and layout of rooms, buildings, and cities. A coherent brand architecture can lead to impact, clarity, synergy, and leverage rather than market weakness, confusion, waste, and missed opportunities.*

*Brand architecture is an organizing structure of the brand portfolio that specifies brand roles and the nature of relationships between brands. This article introduces a powerful brand architecture tool, the brand relationship spectrum. It is intended to help brand architecture strategists to employ, with insight and subtlety, sub-brands and endorsed brands. Sub-brands and endorsed brands can play a key role in creating a coherent and effective brand architecture. In particular, they provide tools to:*

- *allow brands to stretch across products and markets,*
- *address conflicting brand strategy needs,*
- *conserve brand-building resources in part by leveraging existing brand equity,*
- *protect brands from being diluted by over-stretching, and*
- *Signal that an offering is new and different.*

*Without sub-brands and endorsed brands the choice of a new offering would be limited largely to either building a new brand (an expensive and difficult proposition) or extending an existing brand (and thereby risking image dilution). Their application can make a brand architecture work in a complex environment.*

*The brand relationship spectrum, is related to the driver role that brands play. The driver role reflects the degree to which a brand drives the purchase decision and use experience. When a person is asked, "What brand did you buy (or use)? the answer they give will be the brand that had primary driver role responsibility for the decision. At the top, in the house of brands, each brand has its own driver role. With an endorsed brand, the endorser usually plays a relatively minor driver role. With sub-brands, the master brand shares the driver role with sub-brands. At the bottom, in the branded house, the master brand generally has the driver role and any descriptive subbrand has little or no driver responsibility.*

*The brand relationship spectrum recognizes that these options define a continuum that involves four basic strategies and nine substrategies. The position on the spectrum reflects the degree to which brands (e.g., two master brands, the master brand and the subbrand, or the endorser brand and the endorsed brand) are separated in strategy execution and, ultimately, in the customer's minds. To design effective brand strategies, one must understand the each of these four strategies and nine substrategies.*

**Keywords: Brand Choice, Brand Image, Business Planning, Strategic Planning, Product Management, Brand Name Products, Branding (Marketing), Marketing Research**

## AHOUSE OF BRANDS

The contrast between a branded house and a house of brands vividly describes the two extremes of alternative brand architectures. A branded house uses a single master brand to span a set of offerings that operate with only descriptive sub-brands. For example, Caterpillar, Virgin, Sony, Nike, Kodak, and Healthy Choice operate a large number of products under the master brand using this "branded house strategy."

The house of brands strategy, in contrast, involves an independent set of stand-alone brands, each maximizing the impact on a market. As Virgin is a branded house, Procter & Gamble is a house of brands that operates over 80 major brands, largely with little link to P&G or to each other. In doing so, P&G sacrifices the economies of scale and synergies that come with leveraging a brand across multiple businesses. In addition, those brands that cannot support investment themselves (especially the third or fourth P&G entry in a category) risk stagnation and decline, and P&G sacrifices brand leverage in that the individual brands tend to have a narrow range.

The house of brands strategy, however, allows firms to clearly position brands on functional benefits and to dominate niche segments. Compromises do not have to be made in the positioning of a given brand to accommodate its use in other product-market contexts; instead, the brand connects directly to the niche customer with a targeted value proposition.



P&G's brand strategy in the hair care category illustrates the house of brands strategy. Head and Shoulders dominates the dandruff control shampoo category. Pert Plus targets the market for a combined conditioner and shampoo product. Pantene ("for hair so healthy it shines"), a brand with a technological heritage, focuses on the segment concerned with enhancing hair vitality. The total impact of these three brands would be lessened if--instead of three distinct brands--they were restricted to the brand "P&G shampoo" or even were branded as P&G Dandruff Control, P&G Combo, and P&G Healthy Hair. P&G detergents are similarly well positioned to serve niche markets: Tide (tough cleaning jobs), Cheer (all-temperature), Bold (with fabric softener), and Dash (concentrated powder) provide sets of focused value propositions that could not be achieved by a single P&G detergent brand.

Targeting niche markets with functional benefit positions is not the only reason for using a house of brands strategy. Additional reasons include the following:

- Avoiding a brand association that would be incompatible with an offering--The Budweiser association with beer taste would prevent the success of Budweiser Cola. Likewise, Volkswagen would adversely affect the images of Porsche and Audi if the brands were linked.
- Signaling breakthrough advantages of new offerings--Toyota's decision to introduce its luxury car under the separate Lexus name differentiated it from any predecessors at Toyota. Similarly, GM decided to create the Saturn brand with no connection to any existing GM nameplate so that the Saturn message, "a different kind of company, a different kind of car," would not be diluted.
- Owning a new product class association by using a powerful name that reflects a key benefit--Examples are Gleem toothpaste and the Reach toothbrush.
- Avoiding or minimizing channel conflict--L'Oreal reserves the Lancome brand for department and specialty stores that would not support a brand available in drug and discount stores. When unconnected brands are sold through competing channels, conflict is usually a not an issue.

## **SHADOW ENDORSER**

A shadow endorser brand is not connected visibly to the endorsed brand, but many consumers know about the link. This subcategory in the house of brands strategy provides some of the advantages of having a known organization backing the brand, while minimizing any association contamination. The fact that the brands are not visibly linked makes a statement about each brand, even when the link is discovered. It communicates that the organization realizes that the shadow-endorsed brand represents a totally different product and market segment.



A good example of a shadow brand are Lexus (Toyota), DeWalt (Black & Decker), Mates/Storm (Virgin), Banana Republic/Old Navy (GAP), Saturn (GM), Dockers (Levi- Strauss), Mountain Dew (Pepsi), and Touchstone (Disney). In each case, the shadow endorser has a minimal impact on the image of the brand but provides credibility and helps in many segments.

## **ENDORSED BRANDS**

In the house of brands strategy, the brands are independent. Endorsed brands (such Polo Jeans by Ralph Lauren) are still independent, but they are also endorsed by another brand, usually an organizational brand. An endorsement by an established brand provides credibility and substance to the offering and usually plays only a minor driver role. The Marriott endorsement of Courtyard means that the Marriott organization affirms that Courtyard will deliver on its brand promise (which is very different from that of Marriott hotels).

A study of confectionery brands suggests that endorsers pay off. The study involved confectionery offerings each of which was endorsed by one of the corporate endorsers (Cadbury, Mars, Nestle, Terry's, Walls, and a control which was no endorsement). The results showed that all the corporate endorsements added value over the control even for Walls, an ice cream brand whose associations are with a different category. The most impact was found from endorsements from Cadbury and Mars which have the most credibility in the confectionery space.

Making the endorser brands strategy work involves understanding the distinction between an organizational brand and a product brand. Marriott is a product brand for Marriott Hotels and Suites. However, it is the Marriott organizational brand that is endorsing Courtyard and Fairfield Inn. The emotional and self-expressive benefits of the Marriott product brand are maintained, because the product brand is distinct from the organizational brand. One implication is that the Marriott organizational brand is now an important part of the brand architecture and needs to be actively managed.

Another motivation for endorsing a brand is to provide some useful associations for the endorser. For example, a successful, energetic new product or an established market leader brand can enhance an endorser. Thus, when Nestle bought Kit-Kat, a leading chocolate brand, a strong Nestle endorsement was added. The purpose was not so much to help Kit-Kat as to enhance Nestle's image by associating it with quality and leadership in chocolate.

## TOKEN ENDORSER

A variant of the endorser strategy is a token endorser, usually a master brand involved in several product-market contexts, which is substantially less prominent than the endorsed brand. The token endorser can be indicated by a logo such as the GE light bulb or the Betty Crocker spoon, a statement such as "a Sony Company," or by another device. In any case, the token endorser will not have center stage; the endorsed brand will be featured. The role of the token endorser is to provide some reassurance and credibility while still allowing the endorsed brands maximum freedom to create their own associations.

The token endorsement will have more impact if the endorser:

- is well known already (such as Nestle or Post),
- is consistently presented (for example, if the visual representation--the Betty Crocker spoon or the GE bulb--is in the same location in the visual setting of the ad, a package, or other vehicle),
- has a visual metaphor symbol (such as the Traveler's umbrella), and
- appears on a family of products that are well-regarded (such as the Nabisco product lines) and thus provides credibility from its ability to span products.

A common mistake is to exaggerate the impact of a token endorsement when the endorser is not well known and well regarded or when the endorsed brand is well regarded and established in its own right and thus does not need the reassurance of an endorser. Nestle once conducted a U.S. study to determine the impact of the Nescafe token endorsement brand (a strong coffee brand outside the U.S. but a weak one in the U.S.) on Taster's Choice, a strong brand in the United States. Because of Taster's Choice's brand strength, the token Nescafe endorsement had little impact either positively or negatively in terms of image or intention measures.

## LINKED NAME

Another endorsement variant is a linked brand name, where a name with common elements creates a family of brands with an implicit or implied endorser. McDonald's, for example, has Egg McMuffin, Big Mac, McRib, McPizza, McKids, Chicken McNuggets, McApple, and so on. The fact that "Mc" links to McDonald's in effect creates an implied McDonald's endorsement, even though the traditional endorsement is not present. Linked names allow more ownership and differentiation than a descriptor brands strategy such as McDonald's Ribs or McDonald's Pizza.

A linked name provides the benefits of a separate name without having to establish a second name from scratch and link it to a master brand. The Office Jet name, for example, has a natural link to Laser Jet and thus its communication task is made easier. A new name, in contrast, would not only have to be established, but would have to be linked to the Laser Jet brand, a nontrivial task.

## **SUB-BRANDS**

Sub-brands are brands connected to a master or parent brand and augment or modify the associations of that master brand. The master brand is the primary frame of reference, which is stretched by sub-brands that add attribute associations (e.g., Black & Decker Sweet Hearts Wafflebaker), application associations (e.g., Microsoft Office), a signal of breakthrough newness (e.g., Sony Walkman), a brand personality (e.g., Audi TT), and even energy (e.g., Nike Force). One common role of a sub-brand is to extend a master brand into a meaningful new segment--as, for example, Patanjali Ayurvedic Medicines stretches Patanjali from juice, Noodles, snack foods to herbal soap & Cosmetics.

The link between sub-brands and their master brand is closer than the like between endorsers and the endorsed brands. Because of this closeness, a sub-brand has considerable potential to affect the associations of the master brand, which in turn can be both a risk and an opportunity. In addition, the master brand, unlike an endorser brand, will usually have a major driver role. Thus, if Revolutionary Lipcolor is a subbrand to Revlon rather than an endorsed brand (Revolutionary Lipcolor from Revlon), it will have less freedom to create a distinct brand image.

## **THE SUBBRAND AS A CO-DRIVER**

When both the master brand and the sub-brand have major driver roles, it is considered a co-driver situation. The master brand is performing more than an endorser role for example, customers are buying and using both Gillette and Mach3; one does not markedly dominate the other. Usually, for this to be the case, the master brand already has some real credibility in the product class. Gillette, with its innovation over the years, has become a brand that enjoys loyalty in the razor category. Mach3 is a particularly innovative razor, however, and so it too merits and receives loyalty.

In a co-driver situation, unless the two brands stand for comparable quality, the association might tarnish the more prestigious brand. When Marriott, a premium hotel name, endorses Courtyard, the risk to Marriott's status and perceived quality standards is reduced because it is an endorser. If Marriott had instead been a co-driver (meaning in part that its name would be just as prominent in visual depictions)

the Marriott brand would have been perceived to have been stretched downward and its perceived quality as a product brand would therefore be in greater jeopardy.

## **ABRANDED HOUSE**

In a branded house strategy, a master brand moves from being a primary driver to a dominant driver role across a multiple offerings. The sub-brand goes from having a modest driver role to being a descriptor with little or no driver role. Virgin uses a branded house strategy because the master brand provides an umbrella under which many of its business operations operate. Thus, there are Virgin Airlines, Virgin Express, Virgin Radio, Virgin Rail, Virgin Jeans, and Virgin Music and many others. Other branded houses include many (but not all) of the offerings of Healthy Choice, Honda, Sony, Adidas, and Disney.

The branded house option, of course, puts a lot of eggs in one basket. The experience of brands like Levi's, Nike, and Kodak illustrate the risk. Each has struggled with a brand that has been an umbrella for a wide product line. Each has found it difficult to maintain a cool image or a quality position with a large market share. Also, a branded house can limit the firm's ability to target specific groups; compromises must be made. However, the branded house enhances clarity, synergy, and leverage and thus should be the default brand architecture option. Any other strategy requires compelling reasons.

The branded house architecture, such as Virgin's, often maximizes clarity because the customer knows exactly what is being offered. Virgin stands for service quality, innovation, fun/entertainment, value, and being the underdog; it also has a heritage of being fun and outrageous. It could not be simpler from a branding perspective. A single brand communicated across products and over time is much easier to understand and recall than a dozen individual brands each with its own associations. Employees and communication partners also benefit from greater clarity and focus with a single dominant brand. There should be little question of brand priorities or the importance of protecting the brand when a branded house is involved.

In addition, a branded house usually maximizes synergy, as participation in one product market creates associations and visibility that can help in another. At Virgin, the product and service innovations in one business enhance the brand in other businesses. Further, every exposure of the brand in one context provides visibility that enhances brand awareness in all contexts.

Two anecdotes from GE show how the synergistic value of brand building in one business can affect another. First, GE was the perceived leader (by a big margin) in the small appliance category years after

it had exited the business in part because of the advertising and market presence of GE large appliances. Second, more than 80% of the respondents in a survey said that they had been exposed to a GE Plastics ad during a time in which no such ads appeared; but other GE products had been advertised. Clearly, the accumulation of brand exposures over time and over business units has impact far beyond their intended function.

Finally, the branded house option provides leverage--the master brand works harder in more contexts. The Virgin brand, for example, is harnessed and employed in numerous of contexts. The role of business strategy is to create and leverage assets, and thus the branded house is a logical choice.

### **SAME BRANDS BUT WITH DIFFERENT IDENTITIES**

When the same brand is used across products, segments, and countries, one of two implicit assumptions is usually made, both of which are counterproductive to creating an optimal brand architecture. The first assumption is that there can be different brand identities and positions in every context despite the common brand name. The use of dozens of brand identities, however, creates brand anarchy and is a recipe for inefficient and ineffective brand building. The second assumption is that there is a single identity and position everywhere even though the imposition of a single brand identity risks a mediocre compromise that is ineffective in many of its contexts. In fact, there usually needs to be a limited number of identities that share common elements but that have distinctions as well. For example, GE Capital requires certain associations that are inappropriate for GE appliances.

### **SELECTING THE RIGHT POSITION IN THE BRAND RELATIONSHIP SPECTRUM**

Each context is different, and it is difficult to generalize about when to use which spectrum subcategory and how to meld sets of brands and their relationships into a composite brand architecture. The brand architecture issues become most graphic when a new offering is added to the existing set of brands. Thus the perspective of a new brand will be the primary frame of reference in the following discussion of the conditions that would suggest a move either down or up on the spectrum. These issues also arise, of course, when evaluating an existing brand architecture to identify needed adjustments.

### **DOES THE MASTER BRAND CONTRIBUTE TO THE OFFERING?**

The master brand needs to add value (or gain value) by becoming attached to a new product offering in the branded house scenario. It can add value by adding associations that contribute to a value

proposition, by providing credibility to the offering, by sharing the visibility of the master brand, and by generating communication efficiencies that can result in cost advantages.

## **ASSOCIATIONS ENHANCING THE VALUE PROPOSITION**

Most fundamentally, does the master brand make the product more appealing in the eyes of the customer? Do the positive associations of the master brand transfer to the new product context, and are the associations relevant and appropriate? When the answer is yes, the brand equity can be leveraged in the new context. For example, Calvin Klein fragrances are enhanced by the Calvin Klein associations of an authoritative edgy designer with provocative, sexy clothes and vivid user imagery.

### **Credibility with Organizational Associations**

A brand, especially a new brand, has two tasks. First, a relevant, compelling value proposition needs to be created. Second, the value proposition needs to be made credible, a task that is most difficult with a compelling value proposition that breaks new ground and involves consumer risk--e.g., a battery-powered car or a solar home. By attaching a brand with strong organizational associations, however, the credibility challenge can be reduced or even eliminated.

A brand, particularly a new entry, requires visibility not only to get an offering considered, but also to imply a host of positive product and organizational attributes. An existing brand such as CitiGroup may already have visibility--the problem is how to link it to a new business arena . In contrast, establishing visibility for a new entrant that is not linked to a visible established brand can be expensive and difficult with so much marketplace clutter.

## **COMMUNICATION EFFICIENCIES**

All aspects of brand building involve significant fixed costs that can be spread over all the contexts in which the brand is involved. The creation of advertising, promotions, packaging, displays, and brochures is both costly in time and in talent. When a brand enters a new brand context though, prior brand-building efforts can be adapted or used directly. Ads and publicity for GE jet engines and GE appliances are seen by potential buyers of both product lines, giving GE an advantage over more focused rivals. As media like event sponsorships (e.g., sports events and music concerts) and the use of publicity become more important relative to conventional media.

The potential economies of scale and synergy will tend to be higher under the following conditions:

- When the collective communication budget supporting a brand playing a driver role is significant. The communication budget for a brand used as an endorser will have fewer economies of scale because in those contexts other brands will still need to be supported.
- When there is a meaningful brand-building budget. When the numbers get small the synergy potential also shrinks.

The impact of a brand extension or brand endorsement on the master brand equity is often overlooked but can be critical. Some organizations allow access to their brand to business units that are concerned only with the credibility gained by using the name not the equity of the master brand. If the brand will help, they will use it with no regard for any image dilution that may be generated. If there is no organizational unit to prevent this brand extension or brand endorsement promiscuity, real brand equity damage may result.

A brand extension or brand endorsement should be a vehicle to support and enhance the key master brand associations. A Healthy Choice offering, for instance, should reflect and reinforce the core identity of Healthy Choice. If Healthy Choice is used to promote a product--even a quality product--that is not positioned as a healthy food, it undercuts the brand. It can be difficult but important to say no, to recognize the boundaries of a brand, and to resist the temptation to stretch it too far. The Levi's name, which means casual clothing, defines boundaries as well.

The development and support of a new, separate brand is expensive and difficult. Multiple brands complicate the brand architecture for both the firm and the customer. Using an established brand in a branded house strategy, by comparison, will reduce the investment required and lead to enhanced synergy and clarity across the offerings. Thus a separate brand should be developed or supported only when a compelling need can be demonstrated.

Because of the enormous pressure to create new brands by those who believe (often wishfully) that the latest product improvement merits a new name, organizational discipline is required to make sure that any new brand is justified. This discipline might involve a top-level committee with sign-off authority, as well as a specified set of conditions under which a new brand is justified. Although these guidelines will depend on the context, new brands in general should be absolutely necessary to either create and own an association, retain a customer relationship, represent a totally new concept, avoid an association, or deal with a severe channel conflict issue. The "absolutely necessary" qualification is important to set the right tone and keep managers from picking rationalizations.



## **CREATING AND OWNING AN ASSOCIATION**

The potential to own a key association for a product class, particularly a newly introduced class, is one rationale for a new brand. Pantene ("for hair so healthy it shines") would not be successful under the Head & Shoulders or Pert brands because the unique benefit of Pantene could not emerge under the shadow of the existing associations. When an offering has the potential to dominate a functional benefit (as is the case for many of the P&G brands), a distinct brand is justifiable. However, a similar argument is unclear at General Motors, which aspires to be a house of 33 brands; the motivating segmentation of key association is fuzzy and complex. The GM brands in general lack a distinct driving value proposition.

### **Representing a New, Different Offering**

A new brand name can help tell the story of a truly new and different offering or signal a breakthrough benefit. Because there is a temptation for all new-product managers to believe that they are in charge of something dramatic, however, a larger perspective is needed. A minor evolution or an empty attempt to revitalize a product will rarely qualify. A new brand name should represent a significant advance in technology and function.

## **RETAIN/CAPTURE A CUSTOMER/BRAND BOND**

When a firm buys another brand, there is an issue as to whether the purchased brand name should be retained. In making this judgment, the strength of the acquired brand--its visibility, associations, and customer loyalty--should be considered as well as the strength of the acquiring brand. The customer bond to the acquired brand name is often the key ingredient; if it is strong and difficult to transfer, keeping the acquired brand could be a sound decision. The following conditions would make a brand equity transfer difficult:

- The resources required to change the acquired name are not available (or are not justified).
- The associations of the acquired brand are strong and would be dissipated with a brand name change.
- There is an emotional bond, perhaps created by the organizational associations of the acquired brand that may be difficult to transfer.
- There is a fit problem; the acquiring brand does not fit the context and position of the acquired brand.



## **AVOIDING CHANNEL CONFLICT**

Channel conflict can preclude using established brands; the problem usually is twofold. First, an existing channel may be motivated to stock and promote a brand because it has some degree of exclusivity. When that is breached, the motivation falls. Second, an existing channel will support a higher price in part because it provides a higher level of service. If the brand became available in a value channel, the brand's ability to retain the high-margin channel would be in jeopardy.

If the business is ultimately too small or short-lived to support necessary brand building, a new brand name will simply not be feasible whatever the other arguments are. It is costly and difficult to establish and maintain a brand, almost always much more so than expected or budgeted. Too often in the excitement of a new product and brand, unrealistic assumptions are made about the ability and will to fund it adequately. The "will" is particularly important; many organizations have deep pockets but short arms. It is futile to plan brand building only to fail to fund its construction and provide a maintenance budget.

### [ACLOSING NOTE](#)

The brand relationship spectrum, with its four branding routes, is a powerful tool; however, nearly all organizations will use a mixture of all of them. A pure house of brands or branded house is rare. The challenge is to create a brand team where all the sub-brands and brands fit in and are productive.

# Literature Output of Supply Chain Management: A Scientometric Approach

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## ABSTRACT

*This paper aims to evaluate the contributions of researchers in the discipline of management by means of this journal 'supply chain management' in recent five years between 2010 and 2014. The present study focuses to identify the chronology wise distribution; special issues of the publications; author productivity; single and co- authorship pattern of contributions; global wise distribution; subject wise, source wise distribution; the length of articles of the Journal. For analysis, the scientometric indicators such as Co - Authorship Index (CAI), Relative growth rate (RGR), Doubling time (DT), Degree of collaboration (DC) and Collaborative Co- Efficient have been employed to retrieve the results based on the objectives. The results shows that it is found that out of 264 research outputs, the highest numbers of 48 papers were published in 2014 and the lowest number 39 articles were in 2011. The majority of 202 papers from research articles followed by 35 from case studies, 14 literature review, 9 from concept papers and the minimum number of 1 from general review articles. The degree of collaboration in this journal ranges from 0.82 to 0.916 and the average degree of collaboration in Supply chain management journal is 0.875.*

**Keywords:** *Scientometrics, supply chain management, Literature trends, DC, RGR, DT, CAI, CC, and management.*

## INTRODUCTION

The term "supply chain management" entered the public domain when Keith Oliver, a consultant at Booz Allen Hamilton used it in an interview for the Financial Times in 1982. The term was slow to take hold. It gained currency in the mid-1990s, when a flurry of articles and books came out on the subject. According to APICS Dictionary, Supply chain management has been defined as the "design, planning, execution, control, and monitoring of supply chain activities with the objective of creating net value, building a competitive infrastructure, leveraging worldwide logistics, synchronizing supply with demand, and measuring performance globally. According to the Council of Supply Chain Management Professionals (CSCMP), supply chain management encompasses the planning and management of all activities involved in sourcing, procurement, conversion, and logistics management. It also includes

coordination and collaboration with channel partners, which may be suppliers, intermediaries, third-party service providers, or customers. Supply chain management integrates supply and demand management within and across companies. Frank defines that SCM draws heavily from the areas of operations management, logistics, procurement, and information technology, and strives for an integrated approach.

We can say that the world is one big supply chain mainly why because SCM focuses major issues including the rapid growth of multinational corporations and strategic partnerships; global expansion and sourcing; fluctuating gas prices and environmental concerns. In the emerging trends, supply chain management is the most significant discipline in the world present scenario. In such a way, periodicals and serials such as journals, magazines are played a vital role to growth and improvement of any discipline. In this paper, researchers have analyzed the publications of articles in Supply chain management: an international journal' in the recent six years from 2009 to 2014.

## **RELATED WORK**

Indian journal of biotechnology by Velmurugan and Radhakrishnan (2015) in International Journal of Multidisciplinary Consortium, Indian Journal of Pure and Applied Physics (IJPAP) for the Year 2009 – 2012 by Velmurugan (2014) in Asian Review of Social Sciences, Technical Review Journal: A Scientometric Study by Velmurugan (2014) in International Journal of Digital Library Services, Annals of Library and Information Studies Publications output for the year 2007-2012 by Velmurugan (2013) in International Journal of Library and Information Studies, Journal of Intellectual Property Rights (JIPR): A Bibliometric Study by Velmurugan (2013 ) in Library Philosophy and Practice (e-journal), Annals of Library and Information Studies for the Year 2007 – 2012 by Velmurugan (2013) in International Journal of Digital Library Services, Supply Chain Management by Tsai and Chi (2011) in International Journal of Digital Content Technology and its applications and Library Herald by Thanuskodi (2011) in Researchers World–Journal of Arts, Science and Commerce.

Defence Science Journal by Verma and Tamrakar (2009) in DESIDOC Journal of Library and Information Technology, Indian Journal of Pharmaceutical Education and Research by Kulkarni; Poshett and Narwade, (2009) in Annals of Library and Information Studies. Ganjihah and Gowda (2008) in Information Studies, Strategic Management Journal by Raut; Sahu and Ganguly (2008) in Annals of Library and Information Studies, Pramana: Journal of Physics by Kumara et al (2008) in Annals of Library and Information Studies, Journal of Structural Engineering by Maheswaran; Sathish Kumar and

Sridharan (2008) in *Annals of Library and Information Studies*, Mausam by Garg; Sharma and Kumar (2008) in *Annals of Library and Information Studies*, *Journal of Oilseeds Research* by Kumara and Kumar (2008) in *Annals of Library and Information Studies*, *ACM Transactions on Information Systems* by Keshava; Tamrakar and Sharma (2007) in *Annals of Library and Information Studies*, *Journal of the Indian Society of Cotton Development* by Dixit and Katare (2007) in *Annals of Library and Information Studies*, *Demography India* by Asha (2007) in *Annals of Library and Information Studies*, *Journal of the Indian Society for Cotton Improvement* and *Indian Journal of Fibre and Textile Research* by Jena (2006) in *Annals of Library and Information Studies*, *Indian Journal of Environmental Pollution* by Biradar (2006) in *Annals of Library and Information Studies*, *Annals of Library and Information Studies* by Verma. *Journal of Information Literacy* by Velmurugan & Radhakrishnan (2015) in *Journal of Information Sciences and Application*, *Open Software Engineering Journal (OSEJ)* by Velmurugan & Radhakrishnan (2015) in *Journal of Information Sciences and Application*.

## **OBJECTIVES**

The major purpose of this study is to evaluate the publication research performance of the journal of Supply Chain Management during the period between 2009 and 2014. The other objectives are to identify the chronology wise distribution, to trace the special issues of the publications, to examine author productivity, to find out the single and co- authorship pattern of contributions, to examine the global wise distribution of contributions, to calculate subject wise distribution of contributions, to ascertain the institution wise distribution of contributions, to investigate the source wise distribution, to observe the length of articles during the period of study and to evaluate the Degree of Collaboration of the Journal.

## **MATERIALS AND METHOD**

For the present study, *Supply Chain Management: An International Journal (SCM. IJ)* has been taken as a source journal which is being published online by Emerald Inc., UK since 1996. This journal covers almost all aspects of delivery process such as procurement, manufacturing, logistics, inventory management, account management, marketing, new product development, and theoretical contributions such as operations management, corporate strategy, organizational behavior, new institutional economics, and public policy regarding to developing countries throughout the world. *Supply Chain Management* is indexed and abstracted in:

- Cabell's Dictionary of Publishing Opportunities in Management and Marketing
- INSPEC
- International Logistics Abstracts
- ISI: Current Contents/Social and Behavioral Sciences and Alerting Services
- ISI: Journal Citation Reports/Social Sciences Edition
- ISI: Social Sciences Citation Index
- ISI: Social Scisearch
- Online Logistics Bibliography and
- Scopus

To achieve the objectives of this study, the data was collected from “Supply Chain Management” journal official website. A total of 264 scientific publications have been published in the recent six years with thirty six issues of six volumes from 2009-2014. For analysis, the present study covers various variables such as year wise growth rate, authorship pattern, geographical wise distribution, and the scientometric indicators have been employed to arrive for its results such as

1. Co - Authorship Index (CAI),
2. Relative growth rate (RGR),
3. Doubling time (DT),
4. Degree of collaboration (DC) and
5. Collaborative Co- Efficient

## SCIENTOMETRIC INDICATORS

### 1. Relative Growth Rate (RGR)

The relative growth rate (RGR) is the increase in the number of research publications / pages per unit of time. The relative growth rate (RGR) and Doubling time (DT) models have developed by Mahapatra (1985) to measure the publications. The growth rate of total research output published by faculty members from Periyar University has been calculated (Table 6, Figure 4) as per the following equation.

$$R(a) = \frac{(W2 - W1)}{(T2 - T1)} \quad (\text{Eqn. 1})$$

Where,

$R(a)$  = Relative Growth Rate over the specific period of interval,  $W1 = \log w1$  (Natural log of initial number of publications),  $W2 = \log w2$  (Natural log of final number of publications),  $T2 - T1$  = Unit difference between the initial and final time,  $R(a)$  = per unit of publications per unit of time (yr).

## 2. Doubling Time (DT)

There exists a direct equivalence between the relative growth rate and the doubling time. If the number of articles or pages of a subject doubles during a given period then the difference between the logarithms of numbers at the beginning and end of this period must be logarithm of the number 2. If natural logarithm is used this difference has a value of 0.693. Thus the corresponding doubling time for each specific period of interval and for both articles and pages can be calculated by the formula.

$$\text{Doubling Time (DT)} = \frac{0.693}{\text{RGR}} \quad (\text{Eqn. 2})$$

## 3. Co-Authorship Index (CAI)

Co-Authorship Index (CAI) is obtained by measuring the scientific publications by single, two and multi authored papers. For the present study, the formula has been employed for Co-Authorship Index which was developed by Garg and Padhi (2001).

$$CAI = \frac{N_{ij}/N_{io}}{N_{oj}/N_{oo}} \times 100 \quad (\text{Eqn. 3})$$

Where,

$N_{ij}$  = Number of papers having authors in block I

$N_{io}$  = Total output of block i

$N_{oj}$  = Number of papers having j authors for all blocks

$N_{oo}$  = Total number of papers for all authors and all blocks

## 4. Degree of Collaboration (DC)

The degree of collaboration is defined as the ratio of the quantity of collaborative literature outputs to the total quantity of research papers in the particular discipline during a certain period of time. It can be observed from the below table that indicates the degree of collaboration in the

scientific publications published by the faculty members of Periyar university during the period of study. To determine the degree of collaboration, the formula suggested by K. Subramanyam (1983) was used.

The formula is expressed as:

$$C = \frac{Nm}{Nm + Ns} \quad (\text{Eqn. 4})$$

Where,

C = is the Degree of Collaboration in a discipline

Nm = is the number of multi-authored research publications in the discipline published during a year

Ns = is the number of single authored research publications in the discipline during the same year

### 5. Collaborative Co- Efficient

To evaluate the extent of collaboration among the researchers in the journal, an index is known as Collaborative Co- Efficient (CC) which was suggested by Ajiferuke (1988) and adopted by Karki and Garg (1997). This can be mathematically expressed as given below.

$$CC = 1 - \sum_{J=1}^{J=K} (1/J) f_j / N \quad (\text{Eqn. 5})$$

Where,  $f_j$  - is the number of J authored papers published in a discipline a certain period of time, N- is the total number of research papers published in a discipline a certain period of time and k - is the greatest number of authors per paper in a discipline.

## RESULTS AND DISCUSSION

### 1. Year and Issue wise distribution

It is evident from the Table 1 Chart 1 show that the year wise growth rate of research scholarly articles published by different authors in supply chain management for the year 2006- 2014. It is found that out of 264 research outputs, the highest number 48 (18.18%) of papers were published in 2014 and the lowest number 39 (14.77%) of articles were in 2011.

Year	Issues						Total	Percentage
	1	2	3	4	5	6		
2009	6	8	8	8	7	8	45	17.05
2010	8	7	7	6	7	7	42	15.9
2011	6	7	5	7	6	8	39	14.77
2012	9	8	8	6	6	8	45	17.05
2013	8	8	8	9	6	6	45	17.05
2014	9	8	9	8	14	0	48	18.18
<b>Total</b>	<b>46</b>	<b>46</b>	<b>45</b>	<b>44</b>	<b>46</b>	<b>37</b>	<b>264</b>	<b>100</b>

Table 1: Year and Issue wise distribution

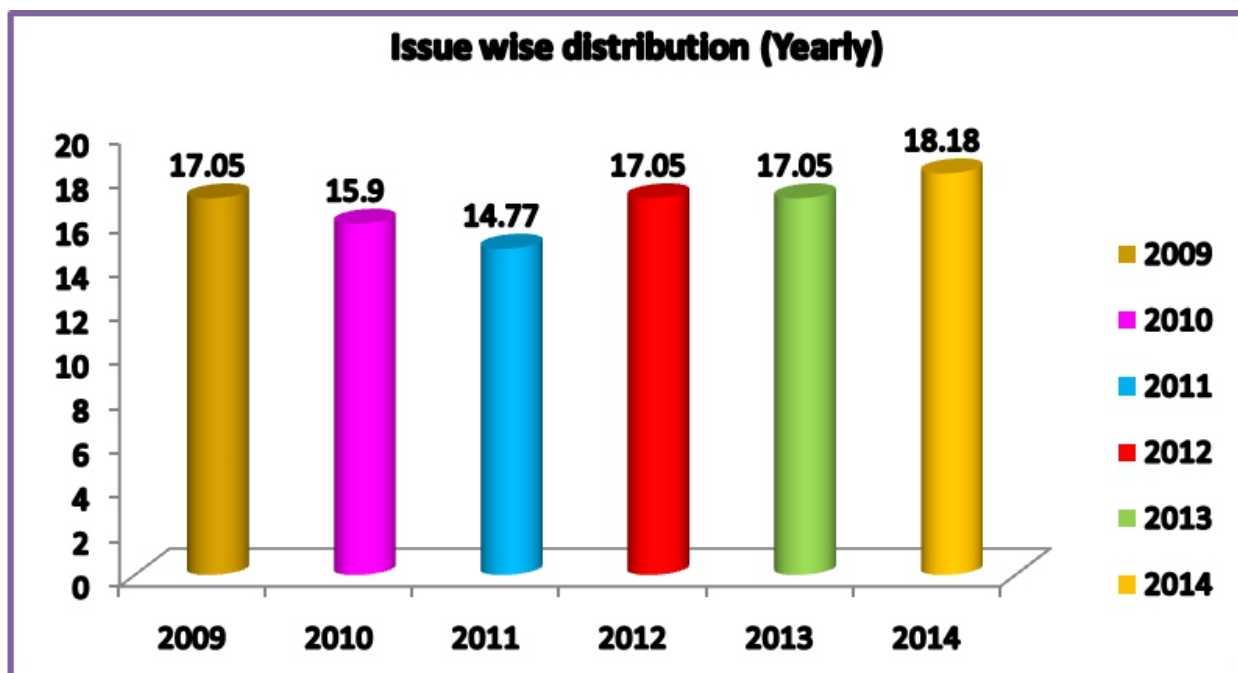


Chart 1: Year and Issue wise distribution

## 2. Special Issues wise distribution

Table 2 represents that year and issues wise contributions of distributions in terms of special issues published during the period of study. It is found that out of 76 articles, the maximum number of contributions i.e. 19 (25.0%) articles of special issues were published in 2011 and the minimum number of 8 (10.52%) were published in 2009. It is also observed issue wise distributions in which the highest numbers of 21(27.63%) issues were published and the least number of 8 articles (10.52%) were published in the issues of second and sixth issues and the years 2009 and 2011 during the period of study.



Year	Issues						Total	Percentage
	1	2	3	4	5	6		
2009	-	8	-	-	-	-	8	10.52
2010	-	-	-	6	7	-	13	17.11
2011	6	-	5	-	-	8	19	25
2012	6	-	-	6	6	-	18	23.69
2013	-	-	-	9	-	-	9	11.84
2014	-	-	9	-	-	-	9	11.84
<b>Total</b>	<b>12</b>	<b>8</b>	<b>14</b>	<b>21</b>	<b>13</b>	<b>8</b>	<b>76</b>	<b>100</b>

Table 2: Special Issues wise distribution

### 3. Relative Growth Rate (RGR) and Doubling Time (DT)

It is inferred from the above table 3 (Chart.2) shows the growth pattern of scientific publications of Supply Chain Management journal based on the relative growth rate (RGR) and doubling time (DT) during the period of study. It has been identified the relative growth rate (RGR) range has been increased from 2009 (0.65) to 2014 (1.71) in the span of six years and the doubling time (DT) has been decreased while measuring chronology wise. The result has been examined based on the study, the relative growth rate was high and the doubling time was less than RGR and it was noted from the quantitative analysis that the growth of literature has been increased gradually.

Year	Total	Cumulative Papers	W <sub>1</sub>	W <sub>2</sub>	RGR	DT
2009	45	-	3.81	-	-	-
2010	42	87	3.74	4.46	0.65	1.07
2011	39	126	3.66	4.84	1.18	0.58
2012	45	171	3.81	5.14	1.33	0.52
2013	45	216	3.81	5.38	1.57	0.44
2014	48	<b>264</b>	3.87	5.58	1.71	0.41

Table 3: Relative Growth Rate (RGR) and Doubling Time (DT)

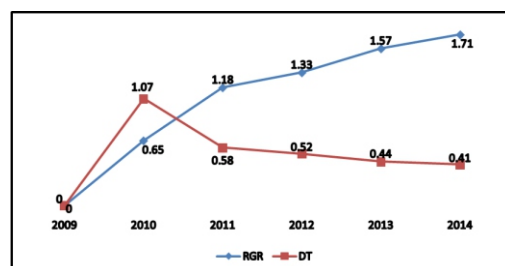


Chart 2: Relative Growth Rate (RGR) and Doubling Time (DT)

#### 4. Authorship pattern

It can be found that the below Table 4 Chart 4 shows the authorship pattern that produced number of research articles in Supply chain management journal during the period of study. The huge numbers of 88 (33.33%) literature outputs have been published by multi-authors and ranked first place followed by three authors 84 (31.83%) and ranked second position, four authors 46 (17.42%) and placed third rank and the least number of papers were contribute by five and six authors i.e. 10 (3.786%) and 3 (1.14%) respectively.

Pattern	2009	2010	2011	2012	2013	2014	Total	Percentage
Single	8	5	4	8	4	4	33	12.5
Double	18	16	14	13	13	14	88	33.33
Triple	12	12	12	12	18	18	84	31.83
Four	6	7	6	7	10	10	46	17.42
Five	1	1	3	4	0	1	10	3.78
Six	0	1	0	1	0	1	3	1.14
<b>Total</b>	<b>45</b>	<b>42</b>	<b>39</b>	<b>45</b>	<b>45</b>	<b>48</b>	<b>264</b>	<b>100</b>

Table 4: Authorship pattern

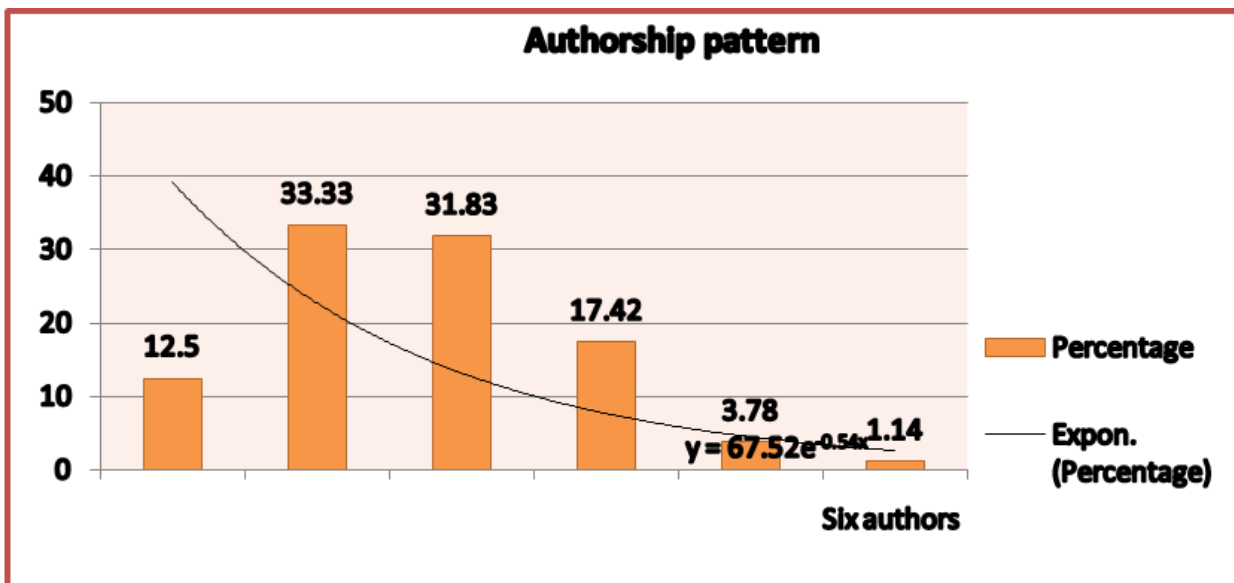


Chart 4: Authorship pattern

#### 5. Collaborative Co-Efficient

It can be observed that Collaborative Co-Efficient has been evaluated using the formula (equation 5) based on the data present in the table 4. The overall value of Collaborative Co-Efficient comes to 0.016 for the present study. The results show that the journal research output among the researchers is somewhat collaborative.

J	f <sub>j</sub>	1/j	(1/j)*f <sub>j</sub>	(1/j)*f <sub>j</sub> /N	CC
1	33	1	33	0.125	0.875
2	88	0.5	44	0.33	0.67
3	84	0.33	27.72	0.31	0.69
4	46	0.25	11.5	0.17	0.83
5	10	0.2	20	0.038	0.962
6	3	0.17	0.51	0.011	0.98
<b>Total</b>	<b>264</b>	<b>2.45</b>	<b>136.73</b>	<b>0.984</b>	<b>0.016</b>

Table 5: Collaborative Co-Efficient

## 6. Pattern of Co-Authorship Index (CAI)

Co-Authorship Index (CAI) is obtained by measuring the scientific publications by single, two and multi authored papers. For the present study, the formula has been employed for Co-Authorship Index which was developed by Garg and Padhi (2001). Based on the formula the below table indicates the results for the present study.

Year	1	CAI	2	CAI	3	CAI	4	CAI	Above 4	CAI	Total
2009	8	141	18	117	12	82	6	76	1	44	45
2010	5	93	16	112	12	87	7	93	2	95	42
2011	4	80	14	106	12	93	6	86	3	143	39
2012	8	141	13	82	12	82	7	88	5	223	45
2013	4	70	13	82	18	123	10	123	0	0	45
2014	4	66	14	83	18	116	10	116	2	85	48
	<b>33</b>		<b>88</b>		<b>84</b>		<b>46</b>		<b>13</b>		<b>264</b>

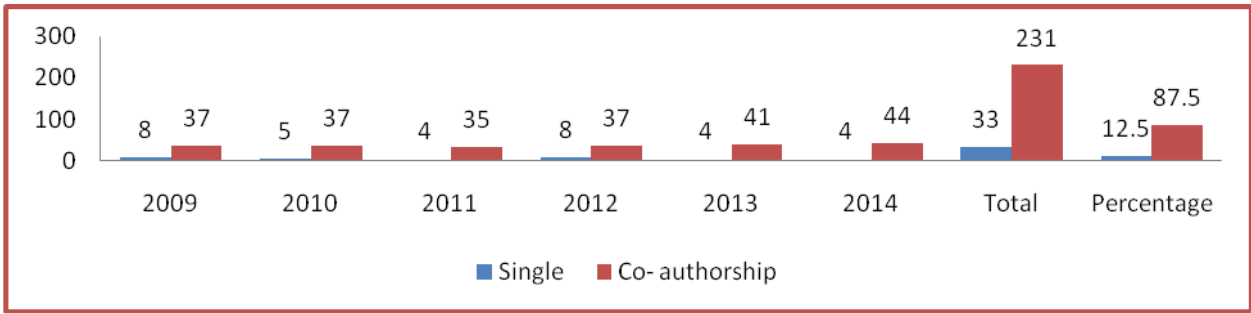
Table 6: Pattern of Co-Authorship Index (CAI)

It can be observed that there are 33 single authored articles, whose CAI falls between 66 (2014) and 141 (2009, 2012). But in case of two author records 88 research articles have been produced, whose CAI falls between 82 and 117 and followed by 84 three author articles, whose CAI falls between 82 and 116. CAI for more than four author articles falls between 44 and 223. Hence, it is observed that single author articles are less in number, with regard to research on this journal during the study period.

## 7. Single and Co-Authorship pattern

Pattern	2009	2010	2011	2012	2013	2014	Total	Percentage
Single	8	5	4	8	4	4	33	12.5
Co-authorship	37	37	35	37	41	44	231	87.5
<b>Total</b>	<b>45</b>	<b>42</b>	<b>39</b>	<b>45</b>	<b>45</b>	<b>48</b>	<b>264</b>	<b>100</b>

Table 6: Single and Co-Authorship pattern



**Chart 5: Single and Co- Authorship pattern**

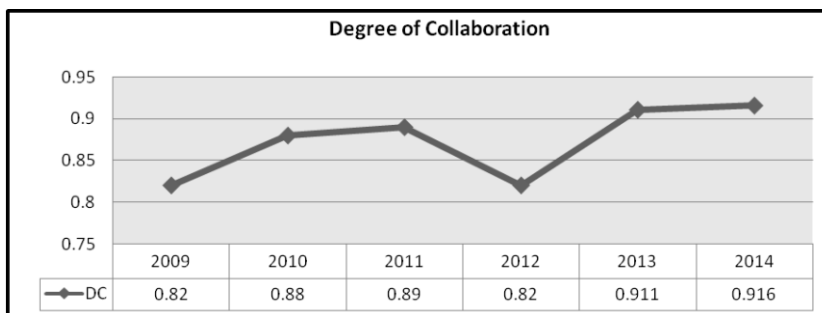
It can be observed from the Table 6 Chart 5 that out of 264 papers, the maximum numbers of articles were contributed by multi- authors i.e. 87.5% while the rest of 33 (12.5 %) articles were contributed by solo authors. It showed that the majority of the articles have been contributed only by multi- authors.

**8. Degree of Collaboration**

It is inferred from the below Table 7 Chart 6 represents that the degree of collaboration between single and multi-authored research outputs during the study period. Out of 264 research articles, the maximum numbers of 231 (87.5%) articles were published by multi- authors and the rest of 33 (12.5%) papers were contributed by single author.

Table 7: Degree of collaboration

S. No	Year	No of authors		Nm + Ns	DC= Nm/Nm +Ns
		Nm	Ns		
1	2009	8	37	45	0.82
2	2010	5	37	42	0.88
3	2011	4	35	39	0.89
4	2012	8	37	45	0.82
5	2013	4	41	45	0.911
6	2014	4	44	48	0.916
<b>Total</b>		<b>33</b>	<b>231</b>	<b>264</b>	<b>0.875</b>



**Chart 6: Degree of Collaboration**

To examine the extent of research productivity based on the formula given by K. Subramanyam is used and the analysis represents for the current study.

$$C = 33 / (33 + 231) \text{ and the average value of } C \text{ is } = 0.875$$

Therefore, the above formula indicates the degree of collaboration in Supply chain management journal is 0.875.

## 9. Global wise distribution

It have been evaluated the global wise distribution of contribution for the present study. It is evident from the Table 8 chart 6 express that the majority of 67 (25.38%) papers were contributed by UK which is placed the first position followed by USA 27 articles (10.23%) which is got the second position and Australia 16 in number which is the third position.

Country	Total Articles	Cumulative Articles	Percentage
UK	67	67	25.38
USA	27	94	10.23
Australia	16	110	6.06
Spain	19	129	7.19
Taiwan	13	142	4.92
Netherland	13	155	4.92
China	12	167	4.55
Finland	11	178	4.17
Sweden	12	190	4.55
Italy	11	201	4.17
Germany	11	212	4.17
Canada	4	216	1.51
Norway	5	221	1.89
India	2	223	0.76
Turkey	5	228	1.89
Others	36	<b>264</b>	13.64
Total	<b>264</b>		<b>100</b>

Table 8: Global wise distribution

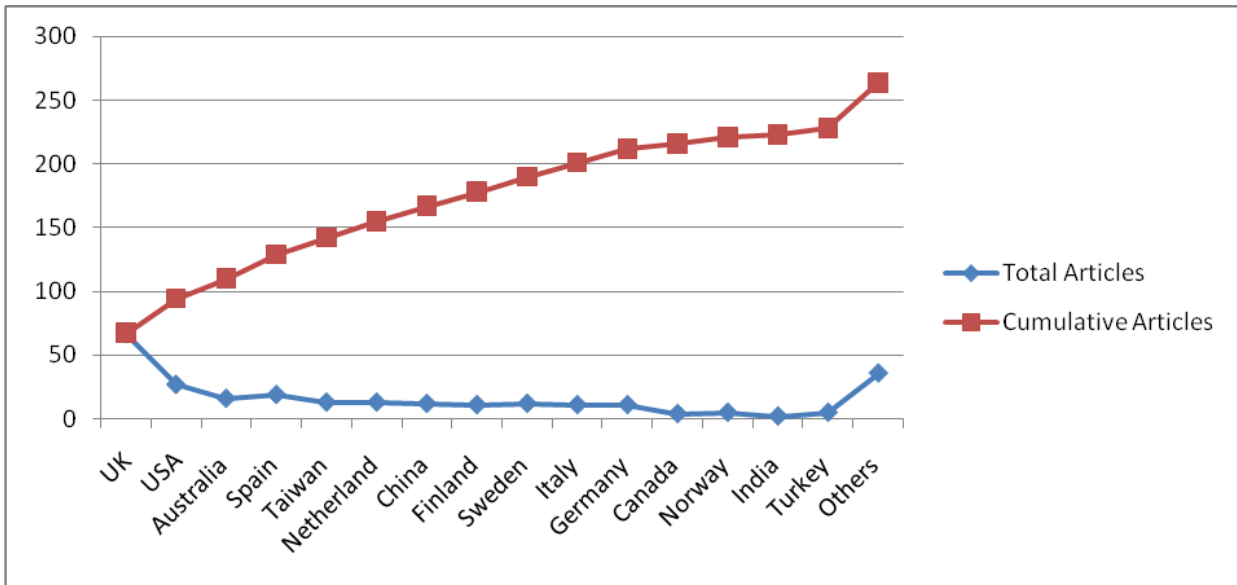


Chart 7: Global wise distribution

10. Document wise distribution

It is evident from the below Table 9 Chart 8 evaluate the document wise distribution during the study period. Out of 264 publications, the majority of 202 (76.52%) papers from research articles followed by 35 (13.26%) from case studies, 14 (5.30%) literature review, 9 (3.41%) from concept papers and the minimum number of 1 (0.38%) from general review articles.

Type of Document	Total Papers	Percentage
Research articles	202	76.52
Case studies	35	13.26
Concept papers	9	3.41
Literature review	14	5.3
View point	3	1.13
General review	1	0.38
<b>Total</b>	<b>264</b>	<b>100</b>

Table 9: Source wise distribution

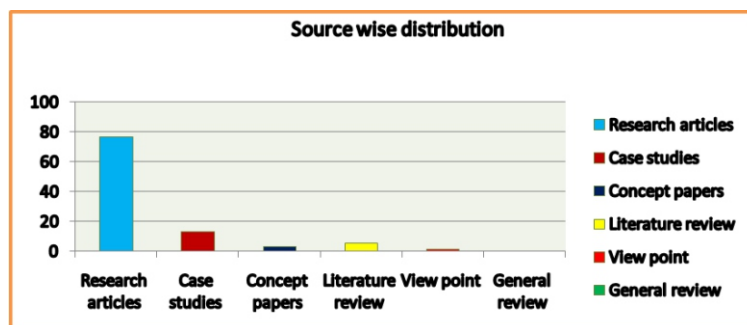


Chart 8: Source wise distribution

## 11. Length of articles

Table 10 Chart 9 shows that the length of articles in terms of pages during the period of study. Out of 264 articles, the maximum numbers of 172 (65.15%) of the articles were between 11-20 pages in length followed by 86 (32.58%) were between 1-10 pages in length. Only 1 (0.38%) article has between above 30 pages in length. The average length of an article was 25.0 pages

Year	No of Pages				Total articles
	01-10	01-11	21-30	Above 30	
2009	25	20	-	-	45
2010	18	23	1	-	42
2011	18	21	-	-	39
2012	7	37	1	-	45
2013	5	40	-	-	45
2014	13	31	3	1	48
<b>Total</b>	<b>86</b>	<b>172</b>	<b>5</b>	<b>1</b>	<b>264</b>
<b>Percentage</b>	<b>32.58</b>	<b>65.15</b>	<b>1.89</b>	<b>0.38</b>	<b>100</b>

Table 10: Length of articles

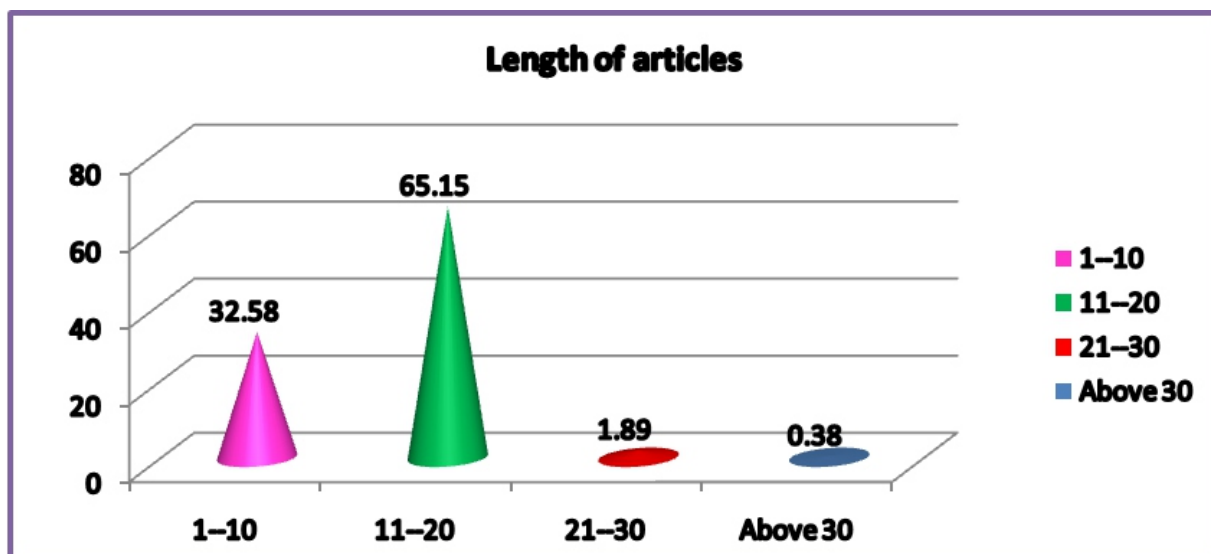


Chart 9: Length of articles

## FINDINGS AND CONCLUSION

As far as the growth rate of scientific publications is concerned, it was found that a growth in terms of research productivity of supply chain management journal has been evaluated during the period of study. It was observed that out of 264 research outputs, the highest numbers of papers were published in 2014 and the lowest number articles were in 2011. The majority of 202 papers from research articles

followed by 35 from case studies, 14 literature review, 9 from concept papers and the minimum number of 1 from general review articles. Out of 76 articles, the maximum number of contributions i.e. 19 (25.0%) articles of special issues were published in 2011 and the minimum number of 8 (10.52%) were published in 2009. The degree of collaboration in this journal ranges from 0.82 to 0.916 and the average degree of collaboration in Supply chain management journal is 0.875. The maximum numbers of 87.5% articles were published by multi- authors and the rest of 12.5% papers were contributed by single author. The majority of papers were contributed by UK which is placed the first position followed by USA and Australia. The maximum numbers of the articles were between 11-20 pages in length and the average length of an article was 25.0 pages. It has been identified the relative growth rate (RGR) range has been increased from 2009 (0.65) to 2014 (1.71) in the span of six years and the doubling time (DT) has been decreased while measuring chronology wise. The overall value of Collaborative Co-Efficient comes to 0.016 for the present study.

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### Author's Profile



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