

# Impact of Retail Revolution on the Economy and Environment of India

PADMPRIYA IRABATTI

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*Shopping in India has witnessed a revolution with the change in the consumer buying behavior and the format of shopping. Retail industry had been evolved through the various formats and now it has reached the state where it is one of the leading industries in India. This research paper mainly highlights few of the statistical facts about why and how retail revolution is gradually changing the face of India. The initial part of paper discusses the status of retailing and foreign investment in retailing. The later part of paper discusses the impact of this retail revolution on economic development of the country. Retail revolution has also impacted the environment of India. Author has discussed the various examples of such environmental issues which are impacted due to the retail revolution.*

*The objective of this research paper was to investigate the important reasons behind retail revolution. The study basically depends on the secondary data collected from various journals, websites, reports of FICCI, Government reports, retail industry analysis ...etc.*

**KEY WORDS:** Retail revolution, Indian economy, environment, retailing in world, FDI in retail.

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## INTRODUCTION

Long ago, Father of the Nation, Mahatma Gandhi realized the importance of the customer for the retailer; he is in fact the first to emphasize on the importance of Customer Relationship Management practices in India.

Shopping in India has witnessed a revolution with the change in the consumer buying behavior and the whole format of shopping also altering. Industry of retail in India which has become modern that can be seen from the fact that there are multi-storied malls, huge shopping centers, and sprawling complexes which offer food, shopping, and entertainment all under the same roof.

India retail industry is expanding itself most aggressively; as a result a great demand for real estate is being created. Indian retailers' preferred

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Prof. Padmpriya Irabatti, MBA, M.Phil, Ph.D. (submitted), Associated Professor, Marketing, Bharati Vidya Peet, Email.- pri\_anshu@yahoo.com

means of expansion is to expand to other regions and to increase the number of their outlets in a city. It is expected that by 2010, India may have 600 new shopping centers.

The retail sector in India is unique. Much of it is in the unorganized sector, with over 12 million retail outlets of various sizes and formats. Almost 96% of these retail outlets are less than 500 Sq. ft. in size, the per capita retail space in India being 2 sq. ft. compared to the US figure of 16 sq. ft. but the picture is changing.

### RETAILING IN INDIA

Indian retail industry is the largest industry in India, with an employment of around 8% and contributing to over 10% of the country's GDP. Retail industry in India is expected to rise 25% yearly being driven by strong income growth, changing lifestyles, and favorable demographic patterns.

It is expected that by 2016 modern retail industry in India will be worth US\$ 175- 200 billion. Indian retail industry is one of the fastest growing industries with revenue in 2007 to amount US\$ 320 billion and is increasing at the rate of 5% yearly. A further increase of 7-8% is expected in the industry of retail in India by growth in consumerism in urban areas, rising incomes, and a steep rise in rural consumption. It has further been predicted that the retailing industry in India will amount to US\$ 21.5 billion by 2010 from the current size of US\$ 7.5 billion.

Because of the increasing number of nuclear families, working women, greater work pressure, and convenience has become a priority for Indian customers. They want everything under one roof for easy access and multiplicity of choice. This offers an excellent opportunity to organized retailing in India which accounts to just 3% of the estimated of the US \$ 180 billion worth of goods that are retailed every year.

### EVOLUTION OF RETAILING

While barter would be considered to be oldest form of retail trade, since independence. Retail in India has evolved like

Haats : haats are periodic markets that form a major part of rural market system in India. This is a location which witnesses a public gathering of buyers and sellers at fixed time s and at fixed location some facts:

Average sales per day Rs. 2.25 lakh

Number of sales outlets per haat : 300 +

Number of visitors per haat : 4500 +

Average sales per outlet :Rs.900

Village covered by a haat :20-50

Melas :- melas are fair and they can range from commodity fairs to religious fair more than 25000 melas held annually in India. the average outlet s in every melas would be more than 800 and average sales per mela would be Rs.143 lakh

Mandis :- mandis are markets set up by the state government for sale of agricultural produce directly from the farmer. Close to 6800 mandis exist s in India and believed to cater to a population of 1.36 lakh.

The following table shows the growth of retail outlets in India  
(figures in millions)

	1996	1997	1998	1999	2000	2001
Food retailers	2.8	2.9	3.1	3.3	3.5	3.7
Non- food retailers	5.7	6.0	6.3	6.6	7.0	7.5
Total	7.5	8.9	9.4	9.9	10.5	11.2

## RETAILING IN INDIA: THE PRESENT SCENARIO

The retail scenario in India is unique. Much of it is in the unorganized sector with over 12 million retail outlets of various sizes and formats. Almost 96% of the outlets are less than 500 sq.ft. in size , the per capita retail space in India being 2 sq.ft. compared to the US figure of 16 sq.ft. with more than 9 outlets per 1000 people, India has the largest number in the world. most of them are independent and contribute asd much as 94% to total retail sales. Due to change in consumerism Indian consumers want everything under one roof for easy access and multiplicity of choice. This offers an excellent opportunity for organized retailers in the country who account for just 6 % of the estimated US \$ 385 billion worth of goods that are retailed in India every year. The retail business in India in the year 2007 was US \$ 385 billion (Rs. 1540000 crores) and a McKinsey study says it is estimated to go to US \$ 1.52 trillion by 2025.one expects that the share of organized retailing will be in the vicinity of 20 % by then.

The present value of the Indian retail market is estimated by the India Retail Report to be around (\$470 billion) and the annual growth rate is 5.7 percent. Retail market for food and grocery with a worth of Rs. 9,43,900 crore is the largest of the different types of retail industries present in India. Furthermore around 12 million retail outlets help India win the crown of

having the highest retail outlet density in the world. The contribution of retail sector to GDP has been manifested below:

Country	Retail Sector's share in GDP (in %)
India	12
USA	10
China	8
Brazil	6

Source : CII-AT Kearney Retail Study

As can be clearly seen, retailing in India is superior than those of its contenders. Retail sector is a sunrise industry in India and the prospect for growth is simply huge.

According to retailing annual review published by CRIS INFAC sept. 2005, over the next five years 73-78million sq.ft. of floor space and Rs. 369000 million worth of real estate investment will be required to sustain the growing organized retail market.

Along with the development of all unorganized outlets and modern formats the mall development is emerging very fast which is boosting the opportunities for employment. And this is beneficial for the growth of the economy.

Mall in 2006	Malls in 2008	Total
71	107	178

## KEY DRIVERS IN RETAILING IN INDIA

### 1. Consumer Pull

In the pre-liberalization supply-led market, the power rested clearly with the manufacturer. In today's demand led market, it's the consumer who call the shots. Over the last decade, there has been a significant evolution in the Indian consumer, mainly due to liberalization of the consumer goods industry that was initiated in the mid-eighties and accelerated through the nineties, combined with a growing consumerism driven by the media, new opportunities and increasing wealth.

### 2. Rising Incomes

Over a past decade, india's middle- and high-income population has grown at a rapid pace of over 10% per annum. This growing high-income

population is triggering the demand for consumer goods, leading to the proliferation of higher quality/higher priced products.

### **3. Explosion of media**

There has been an explosion in media as well during the past decade, kick-started by the cable explosion during the Gulf War, television has accelerated to a point where there are more cable connections than telephones in Indian homes. The bombarding of media has exposed the Indian consumers to the lifestyles of more affluent countries and raised their expectations and aspirations from the shopping experience.

### **4. Change in consumer behaviour**

The urban woman today is literate and in many cases, employed. There is greater work pressure and increased commuting time. And with a shift in the family structure, nuclear families have become a significant component of urban market.

There is change in shopping behaviour in urban India over the past few years with consumers looking for convenience. That is, they want everything under one roof. And bigger choice of products. Increased awareness has also meant that consumers now seek more information, variety, product availability, better quality and hygiene as well as increased service. The concept of "value for money" is picking up.

Traditionally, children seldom accompanied their parents while shopping for groceries. Shopping for children was confined to festivals when dresses were bought for them. But now, because they are pressed for time, working parents prefer to spend as much time as possible with their children.

### **5. Consumerism Cycle**

India is entering into the third stage where retailers control the market. Being the closest link to the consumer in the supply chain, retailers benefit accordingly.

### **6. Foreign retailer looking for entry options**

The increasing attractiveness of the sector has drawn the interest of a number of global retailers. With the opening up of the economy, more and more MNCs have entered the Indian business arena through joint ventures. While foreign retailers cannot start operations on their own mainly because of FDI restrictions on the sector, have joint ventures in India.

**7. Technological Impact**

Technology is probably the most dynamic change agent in the retailing industry. The computerization of various operations in a retail store has changed the face of retailing drastically.

**India's Total retail Market Size – A.T. Kearney and Technopak (US \$ bn )**

Year	A.T Kearney	Technopak
2004	278	
2006	321	336
2008	368	
2010	421	
2011		590
2016		1,011

Source FICCI, Nov.2003

**Growth of organized retail – A.T. Kearney and Technopak (Penetration %)**

Year	A.T Kearney	Technopak
2006	6	4
2010	15	
2011		16
2016		28

Source: 1. CII-A Kearney Report-” Retailing in India: Getting organized to Drive Growth”  
 2. Technopak’s ‘Retail Outlook’- October 2007

**RETAILING- GLOBAL SCENARIO**

Retailing in more developed countries is big business and better organized than what it is in India. According to report published by Mckinsey and Co. the global retail business is worth a staggering US. \$ 6.6 Trillion. In the developed countries most of it is accounted for by the organized retail sector.

Name of the country	% sales of organized retail sector in retail sales
United States	80%
Western Europe	70%
Malaysia and Thailand	50%

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Brazil	40%
Argentina	40%
Philippines	35%
Indonesia	25%
South Korea	15%
China	10%
<b>India</b>	<b>3%</b>

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Source : A&M magazine, 26<sup>th</sup> February 2007

Globally, retailing is customer –centric with an emphasis on innovation in product, processes and services.

**China** - the total sales from retail market in China reached US\$755 billion in 2005. However organized retailing in China accounts for only 20% of it. Also the fragmentation of China’s retail market is so high that top 100 retailers make up for only 10.5% of the total market. The registered sales of department stores grew by 25.7% and that of convenience stores grew by 36.5% in 2005. The Chinese retail market is expected to reach new highs as the population of strong middle class is expected to double by 2020 and mergers and acquisitions among retailers are going in great numbers. The WTO restrictions are also expected to have a favorable impact on its retail sector.

**Japan** - total annual sales for the Japanese retail industry for 2003 amounted to JPY 133,273 billion. Japan had 1.2 million retail establishments in June 2004 and there were 42,738 specialty superstores. Between 2002 and 2004 annual sales per store increased by 3.8%. The growth was mainly driven by the grocery superstores but the number of superstores specializing in clothes gradually came down. The organized retail sector in Japan couldn’t perform at its full efficiency because of collapse of the ‘bubble economy’ in the early 90s.

#### **FOREIGN DIRECT INVESTMENT (FDI) IN RETAIL- INDIAN SCENARIO**

The small trader lobby has been vocal in opposing FDI into retail, and has ensured that government policy on this front remained unchanged. The lobbying is based on the premise that modern retailing will impact the livelihood of millions of small family-run businesses.

With Changing Consumer profile and hence expectations, rising incomes, pressures created by membership of World Trade Organisation, retail sector will have to be opened up eventually to the foreign direct investment.

The foreign direct investment rules till 24/01/06 allowed India to have a presence of international brands, through different routes as follows:

Franchise

Joint Venture

Manufacturing

Distribution

Cash & Carry ( 100%)

#### **BENEFITS OF FDI IN RETAIL**

- **Inflow of investment and funds:** FDI will provide access to larger financial resources for investment in the retail sector that has the potential of triggering big improvements in the retail infrastructure. Higher investments in the sector will lead to more investment in technology, systems, real estate in retail sector.
- **Provide better value to end customers:** FDI in retail has the potential of propping up the scale of operations in this sector. Better scales in retail means better bargaining power with the manufacturers of the goods resulting in better prices for the goods and services better and more product choices and better systems to serve the clients.
- **Implementation of better technology in retail:** With the vast global experience in effective use of technology in retail sector, companies making FDI in Indian retail sector will contribute to coming up with better and efficient systems that will benefit the end consumer in terms of efficient servicing and will develop new benchmark for the Indian retail sector. With IT applications, the modern retail store can cut transaction cost such as due to inventory, delivery and handling. That is precisely how the US based Wal-Mart grew to be a giant because it reduced its distribution costs to 3 percent of sales compared to 4.5 percent of other.
- **Speed up movement of retail to organized sector:** Shift of retail business from unorganized to organized sector is pertinent with the development and betterment of Indian economy. This can be empirically deduced from the statistics of different countries providing the details of organized sector as percentage of total retail and its growth in different countries



providing the details of organized sector as percentage of total retail and its growth in different countries. FDI has the potential of heavy investments in this sector on account of attractiveness of the Indian retail market. This is going to speed up the transfer of retail from unorganized to organized sector.

Taking into consideration the pros and cons of introducing FDI in India, ICRIER has recommended 49% of FDI . The opening up of FDI in India is also expected to be gradual so that the domestic industries can tailor themselves according to the changes. At the formative stage , the idea was to start with 26% of FDI in this sector. But soon the idea changed as China's FDI moved up from 49% to 100% in the retail sector.

While the government is continuing its plans to liberalise FDI in the retail sector in India, foreign companies like Wal-Mart are waiting on the threshold. They basically wish to enter into partnership with various multinational chains. FDI would bring about modern infrastructure that would help to boost the productivity of the organised retail sector in India.

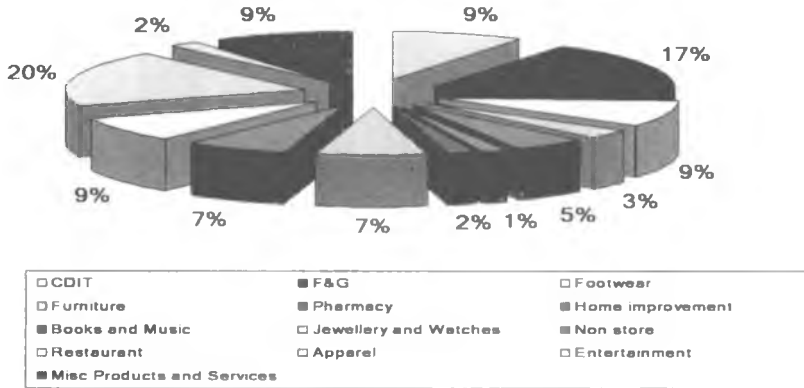
FDI is not allowed in the retail sector and this is the reason why many prominent global players like Dominos, Levis, Lee, Nike, Adidas, TGIF, Benetton, Swarovski, Sony, Sharp, Kodak etc are entering the retail market via licensee or franchisee. The opening up of the economy to FDI in the retail sector is also expected to generate employment. FDI can be a blessing instead of curse only if it produces backward linkages relating to production and manufacturing. It may also, in the process help to push up domestic production as well as exports.

In the present scenario, 51% Foreign Direct Investment is permitted in India only through single brand retailing. The international retailers are entering the market through licensees just as Wal-Mart has entered through the franchisee, Bharti Enterprises.

Metro AG an Shorite are already in operation. Foreign retailers are in search of investing in wholesale. Wal-Mart as we have mentioned has already joined the retail market of India. Geant is also expected to start its retailing operations soon in India hence we may conclude that FDI in retailing in India would require the creation of additional jobs to compensate the resulting job loss. It would result in the reduction in the Kirana shops and Retail Stores. The consumers can benefit from such exposures, it would enhance quality, improve on the supply chain, increase exports, so on and so forth. There are certain other issues that have discouraged FDI in India and they are discussed

## Current Channels : Organized Retail

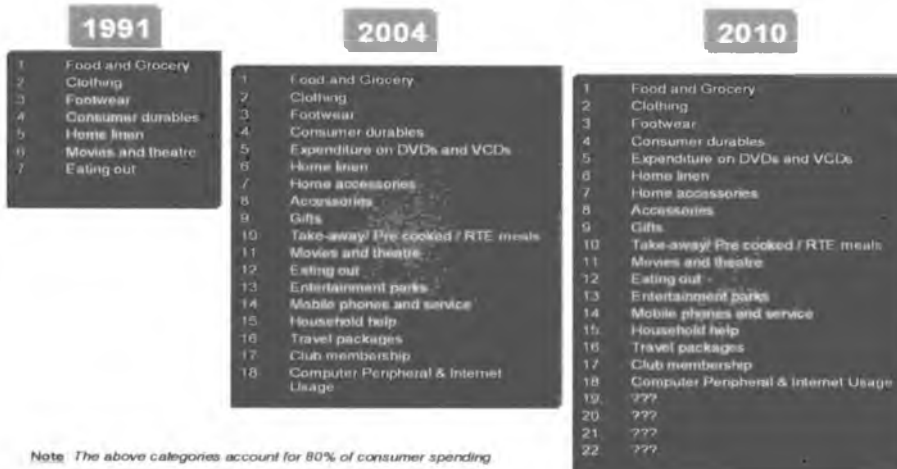
Market Size : US \$ 8billion



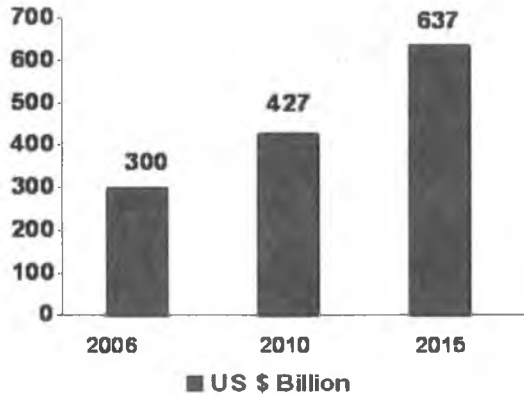
Source: Technopak Analysis

Along with the development of retail industry in India, consumer behavior also has changed. from few spend categories of Indian consumer in 1991 it has grown up up to almost 20 categories in 2004. and many more such categories are expected to be added .the following table shows change in consumerism and impact of retail development on consumer

### In View Of The Rapidly Expanding Spend Categories...



## Growing Retail Market



Source: Technopak Analysis

### Key Drivers for Retail development in India :

- 4 th Largest economy in PPP terms after USA, China & Japan
- To be the 3 rd largest economy in terms of GDP in next 5 years.
- 2 nd fastest growing economy in the world.
- The US \$ 580 billion economy grew 8.2 percent in the year 03-04
- Among top 10 FDI destinations
- Stable Government with 2 nd stage reforms in place
- Growing Corporate Ethics (Labor laws, Child Labor regulations, environmental protection
- lobby, intellectual and property rights, social responsibility).
- Major tax reforms including implementation of VAT.
- US \$ 130 billion investment plans in infrastructure in next 5 years
- 2 nd Second most attractive developing market, ahead of China
- 5th among the 30 emerging markets for new retailers to enter
- A country with the largest young population in the world- over 867 million people below 45 years of age.
- More English speaking people in India than of in the whole of Europe
- 300 million odd middle class - the Real consumers - is catching the attention of the world with over 600 million effective consumers by 2010 India to emerge as one of the largest consumer markets of the world by 2010.

## IMPACT OF RETAIL SECTOR ON INDIAN ECONOMY

### Real estate

RAI has recently estimated – about 40 million sq.ft. of retail space will be created up to 2011. 3.2 billion dollars is being invested in infrastructure development. Along with infrastructure development programme government supports companies for investment in business related to supply chain. Supporting to national highway Programme for connecting the metros of India

### Tourism / outbound shopping:

Many cities attract a large number of tourists. Retailing helps in developing our cities as tourist destinations. It can create and enhance the government revenues

### Outsourcing opportunities :

Retail gives the different kind of opportunities. in the distribution & supply chain system and its create employment as well as revenue for both local and national.

Eg. Take solution – set up nationwide network in transport & warehouse

Polaris – IT products for retail

IBM – solution & consulting arm for retail

JDA & SAP – ERP solution

### Education

Retail companies are starting retail management courses in partnership with management institutes.

Eg. Pantaloon Retail India Limited. Pantaloon has the concept of partnership with educational institute to run retail courses across the entire chain the company has typed up with 11-B schools.

Trent has also started in-house learning programmes and now goes to under graduate colleges to recruit the students.

## IMPACT OF RETAIL ON EMPLOYMENT

Retail companies are starting retail management courses in partnership with management institutes, roping talent from other sectors and developing comprehensive career growth and loyalty plans for existing employee. Top players like Pantaloon Retail India Limited, Trent, shopper's stop etc." the estimated need is 1 lakh of employees till 2011" said Mr. Sanjay Jog, Hr Head Pantaloon Retail India Limited . Pantaloon has the concept of partnership

with educational institute to run retail courses across the entire chain .the company has typed up with 11-B schools. Trent has also started in-house learning programmes and now goes to under graduate colleges to recruit students.

Since the job market is hugely respective to this with more and more business schools focusing on the sector and large retailers setting up retail academics.

The retail industry is the second largest employer in India. It currently employs about 11 percent of the total labor force in India. Ex Finance Minister P. Chidambaram's recent statement "salaries ought not be legislated" is a welcome move as most of the organized retail is in private hands. However only about 6% of the total retail trade is in organized sector. It generates about Rs.55,000 crore (\$12.4 billion). The major and minor players desperately need to work hard in this direction so that next time the figures look more decent. The government must also make an attempt to ameliorate the situation as

Following tables shows the growth and impact on employment

COUNTRY	EMPLOYMENT (%)
USA	16
UK	11
POLAND	12
BRAZIL	15
SOUTH KOREA	18
MALAYSIA	07
CHINA	07
INDIA	10

(SOURCE: FICCI REPORT)

**Table 4: State-wise Number of Workers Engaged in Retail Trade by Type of Enterprises in India (1998)**

States/UT's	Rural				Urban			
	OAE	NDE	DE	ALL	OAE	NDE	DE	ALL
Andhra Pradesh	638358	47320	94699	780377	446500	217763	267496	931759
Bihar	454703	19512	91591	565806	306323	61316	171381	539020
Gujarat	222208	17573	46004	285785	365753	73445	196940	636138
Haryana	91073	2951	12441	106465	124590	14999	67512	207101
Karnataka	329875	36915	83415	450205	276345	130703	243345	650393
Kerala	302444	35376	165253	503073	71970	44521	125383	241874
Madhya Pradesh	418997	26141	58572	503710	437151	55169	166730	659050
Maharashtra	493296	30361	109955	633612	635164	210386	519775	1365325
Orissa	420735	15367	59629	495731	136117	24826	70856	231799
Punjab	119219	7207	24517	150943	185621	33274	101943	320838
Rajasthan	224212	16027	39612	279851	256356	33960	113651	403967
Tamil Nadu	388859	83460	218380	690699	297470	248451	531755	1077676
Uttar Pradesh	705928	29957	81505	817390	753617	86449	401999	1242065
West Bengal	803718	29541	213391	1046350	416387	171080	556196	1143663
Delhi	12503	3872	8693	25068	174315	109134	227370	510819
India	6035466	433507	1414479	7883452	5140913	1578064	3934925	10653902

OAE: Own Account Enterprises, DE: Directory Establishments, NDE: Non-Directory Establishments.  
Source: Economic Census 1998, MOSPI, GOI

**Table 8: Sectoral GDP, Employment & Growth Rates in India (%)**

Sectors	Share percentage in GDP (2004) (%)	Employment	Cumulative average Growth Rate during 1994-2004
Agriculture	22.1	60.5	2.70
Industry	21.7	16.8	6.53
Service	56.2	22.7	7.90

Source: FICCI (2004) & NSS 55<sup>th</sup> Round Employment Survey (1999-2000)

**Table 9: Community-wise employment in different sectors in India (%)**

Industry Group	Hindus				Muslims	Other Minorities	All
	All Hindus	SCs/STs	OBCs	UC			
	All						
Agriculture, livestock, forestry etc.	59.9	66.6	62.1	47.1	39.8	56.4	57.7
Mining and quarrying	0.6	0.9	0.5	0.5	0.3	0.5	0.6
Manufacturing	11.0	8.7	11.9	12.4	20.5	9.0	11.8
Electricity, gas and water	0.3	0.2	0.2	0.4	0.3	0.5	0.3
Construction	5.6	8.0	5.1	3.3	6.8	6.1	5.8
Wholesale and retail trade	8.1	4.7	7.7	13.4	16.8	9.7	9.1
Hotels and restaurant	1.3	0.6	1.4	1.9	1.3	1.1	1.3
Transport, storage and communication	3.7	3.3	3.4	4.8	6.4	4.2	4.0
Finance, insurance, real estate etc.	1.6	0.7	1.1	3.7	1.2	2.3	1.6
Community, social and personal services	7.9	6.3	6.6	12.4	6.8	10.2	7.9
Total	100	100	100	100	100	100	100

Source: Page 117 Sachar Committee Report 2006

### Customer benefits

Middle-class as well as lower income consumers will be the ultimate gainers with multiple benefits:

Reduction of prices in typical monthly basic needs. Shopping bill to reduce by at least 10 per cent within the next 24-30 months, leading to generation of an equivalent amount of surplus disposable income

### **Impact on Branded Consumer Goods**

At the mass market, most Indian consumers are brand-blinded through aspiring for brands that can denote quality, trust and value

Most major new entrants will start with heavy proportion of private labels and will probably use branded goods to demonstrate the price-value imbalance between such goods and their private labels

Experts believe that branded good companies are in for some surprises. They have to go back to the drawing board for new, India-specific strategy.

### **Impact of retail revolution on other demographic factors**

Rise in the purchasing power of Indians

Favorable to farmers

Use of credit & Comfortable Atmosphere

Rising incomes and improvement in infrastructure are enlarging the consumer market.

Shift in consumer demand to foreign brands

Entry to various sources of financing

Improvement in quality of fresh/perishable products in the market

Improved assortment and reliable availability of products

Comfortable Atmosphere- a visit to a retail store appears to be more soothing for the generation-Y. People and kids prefer to shop in an air conditioned a tech savvy manner

Increase in per capita income which in turn increases the household consumption

Demographical changes and improvements in the standard of living

Change in patterns of consumption and availability of low-cost consumer credit

Improvements in infrastructure and enhanced availability of retail space

## IMPACT OF RETAIL REVOLUTION ON ENVIRONMENT

### CO<sub>2</sub> Emissions

Measuring the global carbon footprint - selected countries

COUNTRY	Total Emission of Mt. CO <sub>2</sub>		Growth rate % 1990-2004	Share in total World Retail		Population Share 2004	CO <sub>2</sub> Emission per capita Mt. CO <sub>2</sub>	
	1990	2004		1990	2004		1990	2004
US	4818	6046	25	21.2	20.9	4.6	19.3	20.6
CHINA	2399	5007	109	10.6	17.3	20.0	2.1	3.8
RUSSIA	1984	1524	23	8.7	5.3	2.2	13.4	10.6
INDIA	682	1342	97	3.0	4.6	17.1	0.8	1.2
JAPAN	1071	1257	17	4.7	4.3	2.0	8.7	9.9
GERMANY	980	808	-18	4.3	2.8	1.3	12.3	9.8
CANADA	416	639	54	1.8	2.2	0.5	15.0	20.0
UK	579	587	01	2.6	2.0	0.9	10.0	9.8
KOREA	241	465	93	1.1	1.6	0.7	5.6	9.7
ITALY	390	450	15	1.7	1.6	0.9	6.9	7.8

(SOURCE: Human Development Report 2007-2008)

Study from France completed in December 2008 clearly shows the environmental impact that shopping at Hypermarkets in the suburbs can have, especially in regards to driving. The study has been condensed into a 14 page PDF. But as the reports authors say, The result of this lengthy evaluation may be summarized in one sentence:

**“Carbon dioxide emissions are four times stronger when shopping in a suburban hyper-market than when shopping in a local supermarket.”**

In the non-food sales sector, the targeted surveys indicated that 42% of customers traveled by car when out to make a purchase in the city centre, but this proportion rose to 95% in the ‘burbs.

The study by Beauvais Consultants found that carbon dioxide emissions attributable to final transport for purchasing amounted to 1.1 kg (2.4 lb) of CO<sub>2</sub> for 100• worth of purchases, when the shopping was undertaken at a supermarket in a high density zone. By contrast, Hypermarket purchases in low density zones accounted for 4.7 kg (10.4 lb).

### Electrical Energy

Have you looked at your electric bill recently ? Quite a shock isn’t it ? Aside from air conditioning in antique malls, most electricity is consumed



as lighting. As we all know, lighting is essential for displaying goods and for public safety. A light bulb is a resistive load so a 100 watt light bulb generates light and approximately 314 Btu/hour of heat. Count the light bulbs and fluorescent fixtures in your antique mall and record their wattages. Multiply each watt by 3.14 Btu/hour to determine the amount of heat they release. The amount of heat they generate, and expensive heat it is, can result in the need to use air conditioning in the cooler seasons of the year and in the winter. In the summer, the air conditioning load in mall is substantially greater because of the heat load added by lighting. There is double consumption of electricity First, the electricity consumed for lighting. Then the electricity to run the air conditioning required to remove the heat. A single 100 watt light bulb, on for eight hours per day, five days per week for 52 weeks per year at 8 cents per kilowatt hour for electricity, results in a cost of \$16.64 per year. If there are five 100 watt light bulbs in one dealer's booth and there are 100 booths in your mall, the annual cost is \$8320 per year. Financially its bad for economy and harmful for the environment.

If your electricity consumption per month is 1000 units

Your annual electricity bill will be Rs. 73,248

Generation of this much electricity consumes 4364 kgs of coal

CO<sub>2</sub> emission generation of this electricity is 12000 kgs

You require 552 matured trees around you to take care of exhausted CO<sub>2</sub>.

This shows that a major crisis that India faces today: the crunch of power. One major indicator of the inequitable distribution power stands in the form of increasing malls that are mushrooming in India. And the result is : polarized distribution of power.

### **Air Conditioning**

Air conditioning is the removal of heat, water vapor and contaminants from air which is to be circulated through an occupied space. A relatively recent development with respect to cooling and conditioning spaces occupied by people, air conditioning came into common use only after WWII when non toxic refrigerants became available. Oddly, these are the very same refrigerants which are now banned in the US because they are thought to damage atmospheric ozone. Air conditioning is highly beneficial, in a commercial sense, for many reasons. It enables people to shop and work in spaces which would otherwise be too hot and humid during large parts of the year. Further, air conditioning reduces damage to structures and their contents from excessive

humidity and other contaminants. An air conditioning unit consists of a compressor, evaporator, filter and a method of moving the air. Most are driven by electricity and are typically either centralized or window units. Although very beneficial in meeting the comfort demands of customers and workers alike, air conditioning does represent a significant expense and It is difficult to obtain parts for old units, so for avoiding the expenses and unavailability of parts they use banned refrigerants. Many retailers are using the refrigerants for cooling purpose but all commonly used refrigerants are greenhouse gases, and its harmful for environment during manufacture, use, recharge, leakage, recycling or disposal.

#### **Glass use in building and for display purpose:**

Most of time we forget its even there.largly because we cant see it .glass. Something that looks like nothing the environmental impact of glass is, however, more translucent than completely clear. For manufacturing of 1 tone glass requires 1500oC temperature. A couple more such furnaces and ovens round out the process, before the glass is cooled. All this heat requires phenomenal energy consumption and resulting greenhouse gas emissions. Some calculate this could be as much as 2 tones of CO<sub>2</sub>, per 1 tone of glass, when transport of such a heavy product is factored in. All this gives glass an Embodied Energy of about 12.7 MJ/kg. (By comparison aluminum is 170, cement 5.6 and kiln dried sawn softwood 3.4).

#### **Plastic pollution**

Eight years ago in India, cows were found to be dying on the streets from what was initially thought to be a mystery disease. Closer inspection revealed that the cows were dying from plastic bags. They were mistakenly ingesting the plastic bags while eating food at the side of the roads. At the time, it was estimated that over 3,000 cows were dying each month from plastic bags. According to the audio story attached to by the National Public Radio, between 15,000 and 20,000 cows die each month from plastic bags. Unfortunately, although a plastic bag ban was pushed for, the plastic bag industry managed to persuade against it. In the end, only ultra-thin plastic bags were banned. But it appears that these ultra-thin plastic bags are continuing to be manufactured and distributed in India through retail business. So the result is that more and more cows are continuing to die an excruciatingly painful death from ingesting unused plastic bags.

Here are some facts about the environmental impact of plastic bags:

- Plastic bags cause over 100,000 sea turtle and other marine animal deaths every year when animals mistaken them for food.
- The manufacture of plastic bags add tones of carbon emissions into the air annually.
- Between 500 billion and 1 trillion plastic bags are used worldwide each year
- Approximately 60 - 100 million barrels of oil are required to make the world's plastic bags each year
- Most plastic bags take over 400 years to biodegrade. Some figures indicate that plastic bags could take over 1000 years to break down. This means not one plastic bag has ever naturally biodegraded.
- China uses around 3 billion plastic bags each day!
- In India, each person uses around 220 plastic bags each year

## CONCLUSION

The impact of retail development on various sectors had seen from few years. It is beneficial for the social development as a change in behavior and it also boosting the Indian economy in terms of employment, infrastructure, supply chain, logistics and other development. Because of FDI in India foreign companies are not getting the front door entry and that's why more investment has been not done. May be current government opens the door 100 percent like real estate for foreign retailers and increase the contribution of organized retail.

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