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### Factor analysis of the main advantages of retail boom in India

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#### ABSTRACT

The Indian retail sector is going through a transformation and this emerging market is witnessing a significant change in its growth and investment pattern. Both existing and new players are experimenting with new retail formats. The growth and potential of the sector is being widely acknowledged both in the domestic as well as international forums. India topped AT Kearney's Global Retail Development Index 2009 for the third consecutive year, retaining its position in the global market as the most preferred retail destination amongst emerging markets. Consumer dynamics in India is changing and the retailers need to take note of this and formulate their strategies and tactics to deliver value to the consumer. This paper investigates main advantages and disadvantages of modern retail developments and growth of modern formats in this country.

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#### Introduction

Retailing provides a crucial link between producers and consumers in a modern market economy. The performance of this sector has a strong influence on consumer welfare. Retailers not only provide consumers with a wide variety of products, but also a wide range of complementary services (such as assurance of product delivery), which can lead to more informed choice and greater convenience in shopping. They also provide producers with much needed information on consumers demand pattern. Productivity and efficiency in retail operations lowers price level and reduce distortions in the price structure. Through backward and forward linkage, performance of retailing services affects the performance of interlinked sectors such as tourism, recreational and cultural services, manufacturing of consumer goods agro-good producing industries etc..

Retailing is the largest private industry in India and second largest employer after agriculture. The sector contributes to around 10 per cent of GDP and 6-7 per cent of employment. With over 15 million retail outlets, India has the highest retail outlet density in the world. This sector witnessed significant development in the past 10 years – from small unorganized family-owned retail formats to organized retailing. Liberalization of the economy, rise in per capita income and growing consumerism have encourage larger business houses and manufactures to set up retail formats; real estate companies and venture capitalist are investing in retail infrastructure. Many foreign retailers have also entered the market through different routes such as wholesale cash-and-carry, local manufacturing, franchising, test marketing, etc. With the growth in organized retailing, unorganized retailers are fast changing their business models and implementing new technologies and modern accounting practices to face competition.

Indian consumerism, until the early 1990s remained a point of academic discussion due to its immense potential. Similarly, access to cheaper credit and increased disposal incomes to enjoy their aspirations for private homes, cars, and a plethora of other consumer durables was a distant dream. This however, has changed dramatically over the past decade. The Indian economy has evidenced an unprecedented resurgence, with the GDP

growth averaging close to 6% per annum placing India amongst the fastest growing economies in the world. This growth has meant an empowerment of the consumer. The transition from a protected economy to market driven regime is apparent as suspicions regarding competition from global players dissipate progressively. With domestic industries gaining confidence in their abilities, competition is no longer the deterrent that it had been.

The retail landscape of the country is changing at a rapid pace with malls and multiplexes mushrooming in all major cities. In fact, having reached a substantial capacity at Tier-1 locations, the organized retail revolution is now percolating to Tier II and III cities. Retail has clearly been witnessing a transformation from neighborhood-shopping to the concept of malls and family entertainment centers. Entertainment and experience are becoming integral parts of shopping. Global industry analysts have often confirmed the country's potential as one of the most attractive emerging retail destinations in the world.

#### Objectives of the study

In recent years, there have been several studies which analyze in detail the growth of organized retailing in India. Most of these studies address the issue of retailing in India. None of them, however, specifically address the issue of emergence of organized in retailing and its likely impact across different retail segments especially on unorganized sector, employment, inflow of technical know how, pricing etc. The present paper is an attempt to understand the current retail scenario in India. Specifically, the main objectives of the paper is to identify the main advantages of retail boom for the Economy and Consumers Methodology

The study is based on a survey of 391 respondents [Retailer Organized (40), Retailer Unorganized (37), Consumers unorganized (200) and consumer Unorganized (118)] .The details regarding product category, choice of cities and sample size is as follows:

#### Product category coverage

The present study covered the following categories of organized /unorganized outlets:

- Food and grocery
- Textiles and Apparels
- FMCG (Fast moving consumer goods): durable and nondurable

The, choice of the above categories was guided by the consideration of their propensity to impact unorganized (small) retail outlets, which was the core purpose of the study.

Choice of cities

Since the retail universe is very vast, widespread and diverse, obtaining a nationally representative sample (covering urban and rural areas) would involve a very large budget and time. Moreover, organized retailing is more of an urban and metropolitan phenomenon and therefore, it was also decided that the study should only cover metropolitan cities namely Delhi, Mumbai, Kolkata, Chennai.

**Identifying advantages of retail boom:** To identify main advantages of retail Boom in India seventeen factors were identified which were:

- Development of Infrastructure
- Employment Creation
- Small Business Growth
- Economic Growth
- New Opportunities
- Income generation
- Improved Inventory management System
- Wider market for consumer durables
- Elimination of middleman
- Better shopping experience
- Convenience in shopping
- Availability of Product varieties
- Quality of products
- Better Sales Services
- Space, better ambience & display
- Knowledge about new products
- Comparability of product prices & Features

After identifying main advantages of retail boom, the respondents to survey were asked to rate these advantages. On the basis of data obtained the factor analysis test was conducted to identify fore most advantages of retail boom.

Factor analysis retail boom: In order to analyze the major factors in retail boom, factor analysis test was conducted on response of organized retailers about retail boom, the table below shows two tests which indicate the suitability of our data for factor analysis.

The Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy is a statistic which indicates the proportion of variance in our variables which is common variance, i.e. which might be caused by underlying factors.

High values (close to 1.0) generally indicate that a factor analysis may be useful with the given data. If the value is less than .50, the results of the factor analysis probably won't be very useful. In our case the KMO measure is .738 thus confirming the appropriateness Factor Analysis

Bartlett's test of sphericity indicates whether a given correlation matrix is an identity matrix, which would indicate that your variables are unrelated. The significance level gives the result of the test. Very small values (less than .05) indicate that there are probably significant relationships among given variables. A value higher than about .10 or so may indicate that your data are not suitable for factor analysis. In our case, the significance level has a very small value i.e. .000 which is less than .05 thus suggesting that the variables are highly correlated.

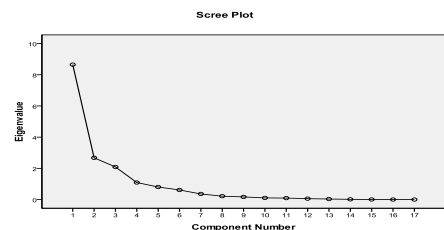
Factor Analysis: Communalities

Communalities indicate the amount of variance in each variable that is accounted for

Initial communalities are estimates of the variance in each variable accounted for by all components or factors. For principal components analysis, this is always equal to 1.0 (for correlation analyses) or the variance of the variable (for covariance analyses). Extraction communalities are estimates of the variance in each variable accounted for by the factors (or components) in the factor solution. Small values (less than .5) indicate variables that do not fit well with the factor solution, and should possibly be dropped from the analysis. In our case, distance of none of the attribute has very small value; therefore no variable has been dropped from further analysis

Factor Analysis: Total Variance Explained

Table 4.14: gives Eigen values, variance explained, and cumulative variance explained for our factor solution The first panel gives values based on initial Eigen values. For the initial solution, there are as many components or factors as there are variables. The "Total" column gives the amount of variance in the observed variables accounted for by each component or factor. The "% of Variance" column gives the percent of variance accounted for by each specific factor or component, relative to the total variance in all the variables. The "Cumulative %" column gives the percent of variance accounted for by all factors or components up to and including the current one. In a good factor analysis, there are a few factors that explain a lot of the variance and the rest of the factors explain relatively small amounts of variance. Therefore, we can leave all those remaining factors which account for a very small amount of cumulative variance. In our case, we have taken first four components or factors as Eigen value for them is more than one (1) and account for a cumulative variance of 85.343 % and dropped remaining 13 factors which account for only 14.657% of cumulative variance



The Extraction Sums of Squared Loadings group gives information regarding the extracted factors or components. For principal components extraction, these values are the same as those reported under Initial Eigen values. Next is "Rotation Sums of Squared Loadings" group. This column is displayed when we have requested for rotation of factors. In our case we have gone for Varimax Rotation. The variance accounted for by rotated factors or components may be different from those reported for the extraction but the Cumulative % for the set of factors or components will always be the same

**Factor Analysis: Rotated Component Matrix**

The table 5 displays rotated component matrix and reports the factor loadings for each variable on the components or factors after rotation. Each number represents the partial correlation between the item and the rotated factor. These correlations can help us formulate an interpretation of the factors or components. This is done by looking for a common thread among the variables that have large loadings for a particular factor or component. Factor analysis rotation methods start with the original axes and apply a mathematical rotation which

simplifies the relationships between factors and variables Through Factor Analysis we have been able to extract four (4) factors out 20 attributes. In other words we have transformed 17 attributes into 4 representative Factors. As is visible from the table 8 variables (store attributes) have correlated with first Factor, 5 variables have correlated with second factor, 4 variables have correlated with third factor and 1 variables with fourth factor

#### **Factor Analysis: Factor Transformation Matrix**

The factor transformation matrix describes the specific rotation applied to our factor solution. This matrix is used to compute the rotated factor matrix from the original (unrotated) factor matrix. If the off-diagonal elements are close to zero, the rotation was relatively small. If the off-diagonal elements are large (greater than  $\pm 0.5$ ), a larger rotation was applied. From the table it is visible that most of the off-diagonal values are small or close to zero indicating that the rotation required in the current case was small. For our study the all variables have correlated with 4 factors and have been named and shown in the Table no. 6.

Thus the factor analysis of benefits of retail boom as listed by respondents to survey revealed that main benefits were new opportunities in form of Development of Infrastructure, Employment Creation, Small Business Growth, Economic Growth, New Opportunities, Income generation, Improved Inventory management System and Wider market for consumer durables, besides retail boom has resulted in Customer Convenience in form of Elimination of middleman, better shopping experience, Convenience in shopping and Availability of Product varieties. The retail boom has also resulted in improvement in store services in form of better Sales Services, Space, better ambience & display, Knowledge about new products and Comparability of product prices & Features

#### **Disadvantages of retail boom:**

The respondents were asked to specify the disadvantages of retail boom. Social dissatisfaction among the lower side of population, Catering to only special class of people, Employment opportunities created are mostly for semi skilled, Elimination of the middle man not reaching the farmers, Disappearance of wholesale commodity market, Local products to go off the shelf, Huge tax burden on organized retail sector, Change in food consumption pattern (junk & fast food) were the prime disadvantages listed by respondents.

#### **Conclusion:**

At a macro level, the overall picture that emerges from interviews with Organized and Unorganized Retailers and consumers is largely positive regarding the likely advantages of organized retail in India. Consumers believe that organized retail would benefit society at large, more so the end consumers -- in terms of better product choices and price More employment opportunities will be generated. Present systems, IT and processes will improve because of investments in infrastructure that are likely to be made by organized retailers. The robust sourcing and distribution network of large retailers would certainly help make the supply chain more efficient.

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**Table 1: kmo and Bartlett's test**

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.738
Bartlett's Test of Sphericity	Approx. Chi-Square	1102.984
	df	136
	Sig.	.000

**Table 2: Communalities**

	Initial	Extraction
Development of Infrastructure	1.000	.760
Employment Creation	1.000	.908
Small Business Growth	1.000	.883
Economic Growth	1.000	.893
New Opportunities	1.000	.911
Income generation	1.000	.919
Improved Inventory management System	1.000	.938
Wider market for consumer durables	1.000	.959
Elimination of middleman	1.000	.785
Better shopping experience	1.000	.909
Convenience in shopping	1.000	.819
Availability of Product varieties	1.000	.822
Quality of products	1.000	.695
Better Sales Services	1.000	.842
Space, better ambience & display	1.000	.908
Knowledge about new products	1.000	.847
Comparability of product prices & Features	1.000	.710

Extraction Method: Principal Component Analysis.

**Table 3: Total variance explained**

Component	Initial Eigen values			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	8.649	50.877	50.877	8.649	50.877	50.877	6.206	36.506	36.506
2	2.676	15.743	66.621	2.676	15.743	66.621	3.539	20.820	57.326
3	2.091	12.299	78.920	2.091	12.299	78.920	3.420	20.120	77.446
4	1.092	6.423	85.343	1.092	6.423	85.343	1.342	7.897	85.343
5	.807	4.748	90.091						
6	.615	3.617	93.708						
7	.360	2.116	95.824						
8	.218	1.283	97.107						
9	.169	.996	98.102						
10	.107	.629	98.731						
11	.096	.563	99.294						
12	.059	.345	99.639						
13	.035	.204	99.843						
14	.016	.093	99.936						
15	.007	.042	99.978						
16	.003	.018	99.996						
17	.001	.004	100.000						

Extraction Method: Principal Component Analysis.

**Table 4: Rotated component matrix**

	Component			
	1	2	3	4
Development of Infrastructure	.819			
Employment Creation	.911			
Small Business Growth	.910			
Economic Growth	.918			
New Opportunities	.860			
Income generation	.850			
Improved Inventory management System	.800			
Wider market for consumer durables	.699			
Elimination of middleman		.626		
Better shopping experience		.888		
Convenience in shopping		.874		
Availability of Product varieties		.811		
Quality of products				.801
Better Sales Services			.846	
Space, better ambience & display			.888	
Knowledge about new products			.868	
Comparability of product prices & Features			.788	
Extraction Method: Principal Component Analysis.				
Rotation Method: Varimax with Kaiser Normalization.				
a. Rotation converged in 6 iterations.				

**Table 5: Component transformation matrix**

Component	1	2	3	4
1	.774	.435	-.442	-.130
2	.599	-.662	.433	-.127
3	.157	.570	.744	.312
4	.137	-.220	-.251	.933

Extraction Method: Principal Component Analysis.  
Rotation Method: Varimax with Kaiser Normalization

**Table 6: Names of extracted factors along with their respective variables**

New opportunities	Customer Convenience	Store overall services	Quality
Development of Infrastructure	Elimination of middleman	Better Sales Services	Quality of products
Employment Creation	Better shopping experience	Space, better ambience & display	
Small Business Growth	Convenience in shopping	Knowledge about new products	
Economic Growth	Availability of Product varieties	Comparability of product prices & Features	
New Opportunities			
Income generation			
Improved Inventory management System			
Wider market for consumer durables			

**Table 7: Disadvantages of retail boom (% respondents)**

	Centre			
	Delhi	Mumbai	Kolkata	Chennai
	11	10	9	10
1. Social dissatisfaction among the lower side of population	45	10	67	20
2. Catering to only special class of people		40	11	10
3. Employment opportunities created are mostly for semi skilled	27	40	11	30
4. Elimination of the middle man not reaching the farmers	9	40	44	40
5. Disappearance of wholesale commodity market	27	20		10
6. Local products to go off the shelf.	45	70		30
7. Huge tax burden on organized retail sector	18	20	11	
8. Threat for friendly kirana / local shopping area store	18	10	22	10
9. Change in food consumption pattern (junk& fast food )	18		11	40