Factor Analysis approach to identify the factors leading to the adoption of Modern Retail in India

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ABSTRACT

Retailing is an activity which is directed at consumers who either consumes goods and services themselves or makes it consumed by the family members but not used for any business trading or industrial use. The organized sector is expected to grow to $200 billion and account for 12-15% of retail sales by 2020. This growth potential has made the Modern Retailers more concerned about understanding the demands & shopping choices of customers and hence increased focus on making shopping experience better. This study examined a key issue pertaining to the identification of Factors influencing the adoption of Modern Retail. A primary survey based on 26 Items related to the Modern Retail shopping experiences was conducted on 486 customers contacted through Convenience Random Sampling in six cities of Punjab (India). The responses of customers were then analyzed through Factor Analysis; resulting in Seven Factors influencing the adoption of Modern Retail- named as- *Product Variety & Quality, Customer Convenience, Hassle Free Valued Shopping, Easy Self Service, Customer Value of Time, Store Ambience & Access to Store.*

Keywords: Factor Analysis, Adoption of Modern Retail, Product Variety & Quality, Customer Convenience, Hassle Free Valued Shopping, Easy Self Service, Customer Value of Time, Store Ambience & Access to Store.

1. Introduction:

Retailing is a set of interlinked selling activities which adds value to the products and services that are sold to the ultimate consumer or end user for their own consumption and retailer is a business entity that sells products and/or services to consumers for individual or family use. It can also be defined as the timely delivery of goods and services demanded by consumers at prices that are competitive and affordable. Thus, retailing is a set of business activities which adds value to the products and services sold to the consumers for the personal or family use *(Michael Levy, Barton A.Weitz, 2003).*

As industry completely revolves around consumers, the retail sector is expected to get revolutionized over the next decade and shall be completely transformed than the beginning of century due to innovations and responsiveness. Moharana (2010) contradicted that nowadays corporate world emphasize on enhancing

goodwill and prestige through strong brand and good image to have acceptability of customers and certain other stakeholders. Due to this phenomenon, Indian Retailers began to provide huge range of services, brands, and goods to be available under one roof making it more convenient to the customers. In addition to the convenience, department stores and other retailers offers exciting and appealing environment to the customers where shopping became much more than mere transaction i.e. selling and buying and can be marked as as a fun –filled , recreational and cherish able occasion. Over the past few decades, the shopping townscape has been transformed from specialty-oriented outlets to one that present integrated "one-stop" shops.

Over the past few decades, it had been observed that consumption preferences of consumer had undergone a big change. In last few years, in India only, number of malls recorded growth rate of fifty five percent in smaller towns as it was 26 percent in the metropolitan cities (Khare, 2011). Saturation in number of malls in urban areas and metropolitan cities had triggered the development of shopping malls in Tier II and III cities. "The smaller cities and rural areas were more lucrative due to low rental and operating costs (KPMG, 2009)".

Retail Industry of world is further classified into Organized Retailing and Unorganized Retailing Industry and proportion of both the sectors across the world is different. If developed countries are considered, proportion of Organized Retail Sector supersedes. On the other hand, in case of developing countries, Unorganized Retail Sector dominates. Proportion of Organized Retail Sector comprises 2%, 5 %, 35%, 55 %, and 85 % respectively in Pakistan ,India, Brazil, Malaysia and USA .

The Indian retail segment accounts for 22 per cent of the country's gross domestic product (GDP) and contributes about 8 per cent to the total employment. India continues to be among the most attractive investment propositions for global retailers. India has emerged as the fifth most favorable destination for international retailers, outpacing the UAE, Russia, Indonesia and Saudi Arabia, according to **A T Kearney's Global Retail Development Index (GRDI) 2012** . "India remains a high potential market with accelerated retail growth of 15-20 per cent expected over the next five years," highlighted the report. According to Investment Commission the Retail Sector is expected to grow almost three times its current levels to $ 660 Billion by 2015.

The Indian retail industry is the fifth largest in the world. Comprising of organized and unorganized sectors, retail industry is one of the fastest growing industries in India, especially over the last few years. With growing market demand, the industry is expected to grow at a pace of 25-30% annually. The Indian retail industry is expected to grow from Rs. 35,000 crore in 2004-05 to Rs. 109,000 crore by the year 2010.

Modern retailing has offered a platform to many new formats such as departmental stores, shopping malls, supermarkets, hypermarkets and many more. Modern formats are not only limited to building form of stores but also include non-store formats like direct selling, catalogue retailing, e-shopping, etc. These formats have been becoming quite popular among consumers and attempts to work on more and more new strategies to attract them.

2. Literature Review

The review of various studies deal with the factors responsible for the adoption of Modern Retail identified by various researchers is discussed below:

Popkowiski , L., Peter, T.L in " Experimental Choice Analysis of Shopping Strategies"(2001) have observed that the changing retail structure has provided the consumer with more options in the form of formats and services such as large variety of products , quality products and less travel time. ***Finlay "Grocery Shopping in the UK: A Study of consumers" (2007)*** examined the underlying perceptions of consumers towards grocery and shopping outlets and found price and location as two critical factors influencing grocery outlet choice. She indicated that consumers are rarely prepared to change their shopping patterns to access alternative outlets for grocery purchases being habitual in nature, time constraint and low cognitive processing characteristics. ***Mishra "Consumption Pattern of Indian consumers" (2007)*** has found out that consumer demand organized retail, and opines that mall space, demography, rising young population , availability of brands, rising finance options, changing lifestyle, and FDI are strengths of modern retail. ***Tendai, M. and Crispen, C., "In store shopping environment and impulsive buying" (2009)*** have investigated the influence of in store shopping environment on impulsive buying of consumers. In store background music, store display, scent, in store promotions, prices, shop cleanliness, shop density or congestion and store personnel are the major factors for in store shopping environment. ***Handa, Vidushi & Grover, Navneet "Retail Sector in India :Issues and challenges" (2012)*** are of the opinion that a large chunk of working population is young with nuclear families in urban areas, along with increasing women population and emerging opportunities in the services sector are some of the key drivers of retail sector in India. Organized retail sector is growing at a very fast pace and is impacting other sectors also and at the same time helping its own competition (Unorganized sector) to shed its shortcomings and inefficiencies. ***Sarah Wambui Kimani (2012)*** have pointed out prices, food quality, freshness, courtesy, physical facilities, individualized attention, competence, variety, prompt service as important factors considered by customers for supermarkets. As far as convenience shops (Kiryana stores / Dukas) are concerned, important factors considered for shopping and preference are quick response, hours open (long), employee attitude, Parking space etc

3. Research Objectives:

There has been an extensive research on modern and traditional retail sector in India. These researches suggest that the modern retail has not been able to impact the traditional form of retail. A consumer gets lured by the facilities, layout and design of a modern retail format. Hence it was imperative to study the impact of recent trends in retail on consumer buying behavior and furthermore its impact on the unorganized retail sector. Off late there have been many challenges and changes taking place as far as modern retail goes. So, this study has attempted to throw a light on what these challenges are and how these retailers are coping up with these changes. The encouragement to conduct this study came from the recent problems and challenges faced by modern retailers. There was a lot of literature on different formats of retail but a concrete study was needed to be carried out that would talk about the acceptance of modern retail formats, its impact on the unorganized sector and also the challenges and hardships being faced by the modern retail in India. After a careful investigation of the available literature, the following objective is formed for the current study:

To study the factors which have strengthened the concept of Modern Retailing in India.

4. Research Design:

In this study descriptive research was used which consists of survey conducted on Modern Retail shoppers in the most developed & advance cities of Punjab namely- Jalandhar, Ludhiana, Patiala, Amritsar & Bathinda. **Universe of the Study** covered the all modern retailers in Punjab. Five cities selected for carrying out this research study because of presence of mall culture and modern retailers in these cities.

Sampling Unit: In this study, sampling unit consisted of customers from varied demographics visiting these retailers in the accessible universe. As far as the sample size is concerned 486 respondents were approached to give their opinion on Modern Retail adoption on a Structured Questionnaire designed for the study.

Sampling Technique: As far as the Sampling Technique was concerned Convenience Random Sampling & Mall Intercept methods were used for collection of data to carry out this study.

5. Data Analysis:

SPSS based Factor Analysis technique was used to identify the factors that help the people in the adoption of Modern Retail. A set of 26 scale items (Table1) was prepared to assess the various attributes of Modern Retail (identified from literature review). The responses of 486 customers were analyzed through IBM SPSS 22 version. The reliability/consistency of scale was tested through Cronbach Alpah and was found to be 0.720 as shown in Table 1.

ITEM No.	STATEMENT	Cronbach Alpha
1	Location Plays an Important Role in buying behavior	
2	The retailer is easy to reach.	
3	Location of the Retailer is close to your Home.	
4	Retailer is located at a less congested place.	
5	There is sufficient parking space available.	
6	The products are readily available	
7	The products perform to their specification.	
8	The products are displayed properly.	
9	Wide variety of products are available.	
10	The store offers value for money products	
11	The Quality of products is good	
12	Latest products are made available	
13	Products are available in various sizes and packaging.	0.720
14	The Display offers enhanced visibility of products.	
15	Employees help in selecting the right product .	
16	The Price charged is genuine.	
17	The Price Tag of the products is properly displayed.	
18	The products can be purchased through credit /debit card , Paytm etc , coupons.	
19	Proper discounts are available on products .	
20	Proper Warranty on products is available.	
21	Exchange facility is available.	
22	Ambience of the store is good(Lights , Ventilation , Temperature control).	
23	Sufficient floor space in the store to move around and search for products.	
24	Products are within the reach of the Customers.	
25	Billing is done promptly and correctly.	
26	The store timing is convenient.	

Table 1: Scale Items & Cronbach Alpha

The factor analysis approach was used to reduce these statements into more clear & concise factors to be used for further analysis**.** The objective of Factor Analysis here is to infer the meaningful interpretation from the Components that have a common rating among the minds of Customers while evaluating the Modern Retailers. The Principal Component Method with Varimax Rotation is used to compute the Rotated Component Matrix. The significance of the applicability of Factor Analysis Method was confirmed through KMO Bartlet Test of Sphercity.

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		**.744**
Bartlett's Test of Sphericity	**Approx. Chi-Square**	**9589.874**
	Df	**210**
	Sig.	**.000**

Table 2: KMO –Bartlett' Test of Sphercity

The Sampling Adequacy of the sample used in the survey was confirmed through KMO value in Table above, the value 0.744 is within the permissible limits as prescribed by Kaiser, which is of Middling nature if fall between 0.70-0.79. Also the Bartletts Sphercity Significance at 0.000 confirms the applicability of Factor Analysis on the collected data.

It is important to mention here that the statements having Inter correlations less than 0.30 were not included for further analysis to ensure the significance of KMO & Bartlet's test and hence the 26 Items scale is reduced to 21 and these items were considered for the purpose of inferring the Factors.

The next step was to decide the number of factors to be extracted from the data. For this the Eigen Value (Cut off 1) is taken as the criteria & the same is presented in the Scree Plot as shown below. The Elbow Criteria (**i.e. Eigen Value less than 1**) were taken as decision rule to decide the number of Factors to be extracted from the data. As is clearly visible in the diagram below Seven (07) Factors were decided to be extracted through Scree Plot.
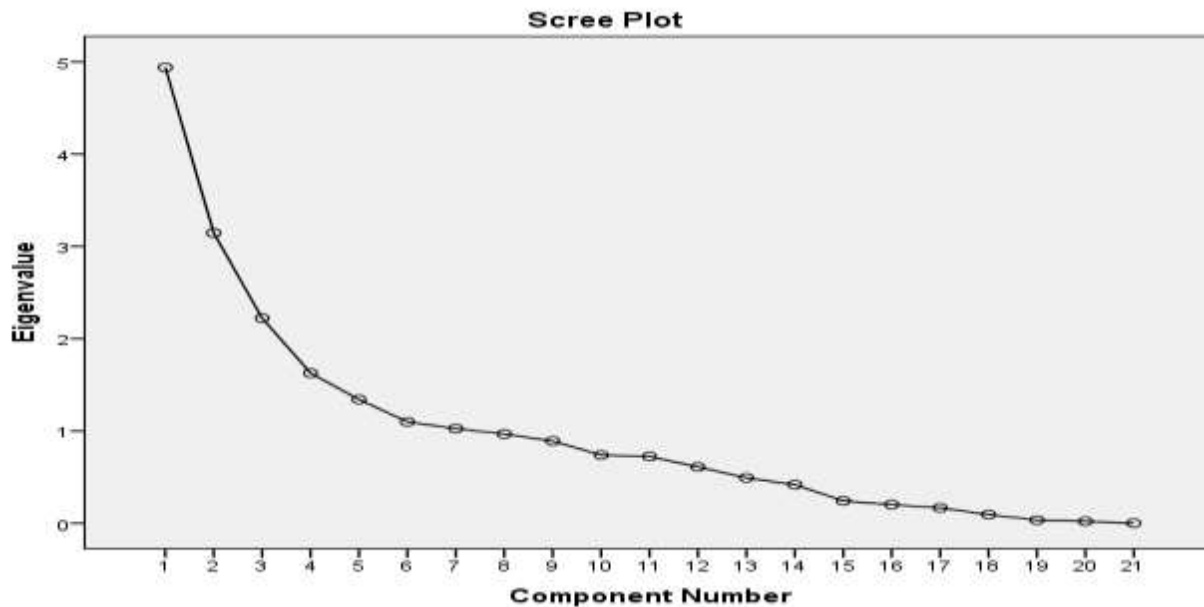
Figure 1: Scree Plot

As presented in Total Variance Explained statistics below, the Seven Factors Extracted account for the 73.348% variation among the responses of Customers selected for the survey, which is quite a significant variation. So, the 21 scale items can be grouped into 07 (Factors) and data can be reduced significantly to present a meaningful impression about the Customer Responses about the Modern Retail adoption issues.

Total Variance Explained

ITEM	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.940	23.525	23.525	4.940	23.525	23.525	4.029	19.183	19.183
2	3.146	14.982	38.507	3.146	14.982	38.507	3.007	14.320	33.504
3	2.223	10.585	49.093	2.223	10.585	49.093	2.927	13.937	47.441
4	1.627	7.749	56.842	1.627	7.749	56.842	1.690	8.046	55.487
5	1.342	6.389	63.231	1.342	6.389	63.231	1.558	7.419	62.905
6	1.099	5.234	68.465	1.099	5.234	68.465	1.126	5.362	68.268
7	1.026	4.883	73.348	1.026	4.883	73.348	1.067	5.080	73.348
8	.967	4.606	77.954						
9	.891	4.242	82.196						
10	.739	3.519	85.715						
11	.723	3.442	89.157						
12	.610	2.903	92.060						
13	.492	2.341	94.401						

14	.418	1.991	96.392							
15	.242	1.152	97.544							
16	.202	.961	98.504							
17	.167	.795	99.299							
18	.093	.444	99.744							
19	.034	.161	99.905							
20	.019	.092	99.996							
21	.001	.004	100.000							
Extraction Method: Principal Component Analysis.										

Table 3: Variance Explained

The results of the rotated component matrix are described below. After the successful iteration of the included variables based upon inter-correlations of the items the Factor Analysis Output was analyzed to identify the following Seven Factors having an influence on the Customer Adoption of Modern Retail. As is visible in the table 4 below the factors are grouped on the basis factor loadings.

Rotated Component Matrix

Statement No.	Variable Name	Component						
		1	**2**	**3**	**4**	**5**	**6**	**7**
12	LATPRODAVALMODRN	**.820**						
9	WIDEVARIETYPRODAVALMODRN	**.779**						
11	GOODQUALMODRN	**.742**						
19	DISCAVALMODRN	**.713**						
20	WARRTY PRODMODRN	**.557**						
17	TAGPROPRDISPLYMODRN				**.305**			
8	GOOD DISPPALY MODRN		**.874**					
18	FLEXIPAYMODRN		**.841**					
13	VAR SIZE MODRN		**.713**					
26	STRTIMCONVMODRN		**.577**					
15	EMPHELPSTOREMODRN			**.926**				
16	GENPRICEMODRN			**.863**				
10	VALFORMONMODRN			**.624**				
4	LESSCGSTDLOCMODRN			**.562**				

14	PRODPROPERDSPLYMODRN					.896				
22	GOODAMBMODRN						.740			
23	FLORSPACEMOVMODRN						.602			
5	SUFFPARKMODRN							.690		
25	BILL SMOOTH MODRN							.688		
24	EASYREACHMODRN								.765	
21	EXCHAVALMODRN								.586	

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.[a]

a. Rotation converged in 11 iterations.

Table 4: Factors Analysis Output

On the basis of the above analysis of items the following names are being given to the identified factors based upon the commonalities of the items grouped in common pool:

Items Grouped/Statement No.	Factor Loadings	Name of Factor
Latest Products Availability (12)	.820	Product Variety & Quality
Wide Variety of Products (9)	.779	
Good Quality Products (11)	.742	
Discounts Available (19)	.713	
Warranty Available (20)	.557	
Easy Reach of Displayed Products (8)	.874	Customer Convenience
Flexi Payments (18)	.841	
Different Sizes & Packs (13)	.713	
Convenient Store Timings (26)	.577	
Employee Help in Locating Products (15)	.926	Hassle Free Valued Shopping
Genuine Price (16)	.863	
Value for Money (10)	.624	
Less Crowded (4)	.562	
Products Tags Properly Displayed (17)	.305	Easy Self Service
Proper Product Shelf Display (14)	.896	
Good Store Ambience (22)	.740	Store Ambience
Floor Space Movement (23)	.602	

Sufficient Parking (5)	.690	**Valuing Customer Time**
Smooth Billing (25)	.688	
Easy Reach (24)	.765	**Access to Store**
Easy Exchange (21)	.586	

Table 5: Naming of Factors

6. Conclusion:

Hence, it can be concluded that the adoption of Modern Retail can be attributed to the below stated factors in context of current study. The customers expect the following from Modern Retailer in India:

a) *Factor 1: Product Variety & Quality: Wide Variety of Quality Products with attractive discount options and a promise of Warranty.*

b) *Factor 2: Customer Convenience: Convenience in terms of Flexi Payment options through Credit/Debit Cards, Paytm etc., variety of packs & sizes to meet their needs, store timings to suit their time options & easy reach of displayed items.*

c) *Factor 3: Hassle Free Valued Shopping: Value for Money products with hassle free shopping through well trained staff and less crowded shopping areas.*

d) *Factor 4: Easy Display: Proper tagging & display of products to make Self Service easier.*

e) *Factor 5: Store Ambience: Good Store Ambience & planned floor space management by Store.*

f) *Factor 6: Customer Value of Time: Less time on non shopping activities like Parking & Billing i.e. Valuing Customer Time.*

g) *Factor 7: Store Access: Easy reach of Store to visit any time in case of Exchange.*

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