

# EXPLORATORY FACTOR ANALYSIS ON PRIORITY INDICATORS OF E-SHOPPING

Ms. T. Rita Jasmine<sup>1</sup> & Dr. G. Rabia Jahani Farzana<sup>2</sup>

<sup>1</sup>Research Scholar, Department of Business Administration,  
Government Arts College (Affiliated To Bharathidasan University)  
Tiruchy - 620022

<sup>2</sup>Assistant Professor & Head, Department of Business Administration,  
Government Arts College (Affiliated To Bharathidasan University)  
Tiruchy - 620022

**Abstract:** Companies are investing heavily in promotion of their products & services via internet based marketing. The number of online shoppers is increasing year by year. This present article aim to focuses on identifies the most important influential Priority criteria considered by the e-shoppers while doing their online shopping. The researcher has adapted a convenient sampling and inducted a ninety people as a respondent living in the urban area of Tiruchirappalli District for the purpose of this study. The research has used a questionnaire as a research instrument. All the seven priority indicators were measured with likert's scale. The study has used a simple frequency and Exploratory factor analysis as a research tools.

**Key Words:** E-Shoppers – Path model – Priority – Exploratory

## 1. INTRODUCTION

The increased availability of Internet is influencing the growth of Internet users around the world. Companies are investing heavily in promotion of their products & services via internet based marketing. The number of online shoppers is increasing year by year. The more popular online shopping is, the more trust are people likely to put into this type of service. Ordering food, deciding which retail store new collection best fits for their budget, and even planning their vacations all happen online. The fast growing e-commerce market in the country will tough US\$ 84 billion in 2021 from US\$24 billion in 2017 on account of healthy growth in organized retail sector.

## 2. METHODOLOGY

This quantitative research was carried out with aim to find out the e-shoppers priority dimension. There are six priority criteria was derived from the previous literature and further explore the analysis. The researcher has adapted a convenient sampling and inducted a ninety people as a respondent for this study. The research has used a questionnaire as a research instrument. All the seven priority indicators were measured with likert's scale. The questionnaire consist of ten questions. seven questions related to Priority indicators and remaining four were related to demographic factors of sample respondents. The study has used a simple frequency and Exploratory factor analysis as a research tools by using SPSS 21 and AMOS.

### 3. DEMOGRAPHIC PROFILE OF SAMPLE RESPONDENTS

Out of ninety sample respondents 32.6 percentage were female and remaining 67.4 percentage were Male respondents participated in the survey. The respondent education were grouped into three levels. 52.2 percentage were graduate and 39.1 percentage were professions and reaming 8.7 percentage of respondents were school level of education. Regarding, their occupation, 12.9 percentage of respondents were professionals and 48.2 respondent were employed either government or private sector and remaining 38.9 percentage of respondents were come under others category.

### 4. DESCRIPTIVE STATISTICS FOR E-SHOPPERS PRIORITY INDICATORS

In order to determine the emerging sub-factors emerging from priority indicators. It is important to reduce the parameters so that there is a limited set of parameters that represent the total consideration set. There are seven E-shoppers priority items of their E-Shopping included in the study. All the seven priority indicators measured with five point likert's scale rating them by five point scale (1 as Not a Priority and 5 as Essential). The descriptive statistics table shows the respondents opinion over these seven priority items.

**Table No. 1. Descriptive Statistics for E-shoppers priority indicators**

Indicators Label/Name	Not a Priority	Low Priority	Medium Priority	High Priority	Essential
Product information	36.8	40.4	13.9	4.9	4
Service Offered	38.4	36.2	16.1	7.3	2
Flexibility of purchase/order	33.8	42.8	11.6	7	4.7
It gives more choice	39.9	37.8	8.8	8.8	4.7
It gives me better deals	40.1	32.2	15.5	6.5	5.7
Buy personal items without inhibition	33.9	37.6	17.1	8	2.3
Saves times	24.4	43	18.8	11.1	12.7

The above table shows the respondents opinion over the seven e-shopping behaviour drivers. It is observed that out of 90 sample respondents, 40.1 percentages of respondents have not give priority for the offers / deal provided online shoppers while ordering goods. It is also found that 42.8 percentage of respondents give low priority in their flexibility of purchase/order. 11.1 percentage of respondents give high priority for online shopping for save their time in many ways. Moreover, 5.7 percentage of respondents opinioned that it is essential for deal provided in online shopping.

### 5. EXPLORATORY FACTOR ANALYSIS

The Exploratory Factor Analysis has been done in three stages. KMO and Bartlett's Test conducted in order to find out the validity and reliability of the whole set of data. In the second stage, the eigen value for seven priority indicators along with chi-square value are summarized. In the final stage the factor analysis with principal component analysis using varimax rotation was done. The main aim of the factor analysis was to reduce the seven priority indicators into sub-factors.

**Table No.2. Result of KMO and Bartlett's Test**

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.897
Bartlett's Test of Sphericity	Approx. Chi-Square	2473.862
	df	21
	Sig.	.000

Kaiser-Meyer-Olking Measure of Sampling Adequacy (MSA) for individual variables is studied from the diagonal of partial correlation matrix. It is found to be sufficiently high for all variables. The measure can be interpreted with the following guidelines: 0.90 or above, marvelous; 0.80 or above, meritorious; 0.70 or above, middling, 0.60 or above, mediocre; 0.50 or above miserable, and below 0.50, unacceptable. The Kaiser-Meyer-Olkin (KMO) test of sample adequacy was conducted to check whether the sample collected was adequate. **Hair et al. (2010)**<sup>1</sup> suggests that if the KMO value is greater than 0.6 and Bartlett's test of sphericity is significant, then factorability of the correlation matrix can be assumed; which, in other words, means the dataset is suitable for factor analysis.

To test the sampling adequacy, Kaiser-Meyer-Olking Measure of Sampling Adequacy (MSA) is computed, which is found to be 0.897. It is indicated that the sample is good and enough to carry out further analysis. The overall significance of correlation matrix is tested with the Bartlett test of Sphericity for grouping factors of priority factor, (approx.. chi-square = 2473.862, df 21, Sig P<0.001) which is significant at 0.001 as well as support for the validity of the exploratory factor analysis of the data set.

**Table No.3. Pair-wise correlation between priority indicators of E-Shopping**

Variable	by Variable	Correlation	Lower 95%	Upper 95%	Signif Prob
Service Offered	Product information	0.6594	0.6153	0.6995	<.0001*
Flexibility of purchase/order	Product information	0.5840	0.5329	0.6310	<.0001*
Flexibility of purchase/order	Service Offered	0.5578	0.5044	0.6069	<.0001*
It gives more choice	Product information	0.6527	0.6079	0.6934	<.0001*
It gives more choice	Service Offered	0.5483	0.4942	0.5983	<.0001*
It gives more choice	Flexibility of purchase/order	0.5957	0.5455	0.6416	<.0001*
It gives me better deals	Product information	0.6359	0.5894	0.6782	<.0001*
It gives me better deals	Service Offered	0.5825	0.5312	0.6296	<.0001*
It gives me better deals	Flexibility of purchase/order	0.6550	0.6104	0.6954	<.0001*
It gives me better deals	It gives more choice	0.6183	0.5702	0.6622	<.0001*
Buy personal items without inhibition	Product information	0.5322	0.4768	0.5835	<.0001*
Buy personal items without inhibition	Service Offered	0.6200	0.5720	0.6637	<.0001*
Buy personal items without inhibition	Flexibility of purchase/order	0.5069	0.4495	0.5601	<.0001*
Buy personal items without inhibition	It gives more choice	0.3930	0.3283	0.4541	<.0001*
Buy personal items without	It gives me better	0.5185	0.4620	0.5708	<.0001*

<sup>1</sup> Hair, Joseph F., William C. Black, Barry J. Babin, and Rolph E. Anderson. 2010. *Multivariate Data Analysis: A Global Perspective*, 7th ed. New York: Pearson.

Variable	by Variable	Correlation	Lower 95%	Upper 95%	Signif Prob
inhibition	deals				
Saves times	Product information	0.4001	0.3357	0.4607	<.0001*
Saves times	Service Offered	0.3703	0.3043	0.4327	<.0001*
Saves times	Flexibility of purchase/order	0.4608	0.4002	0.5174	<.0001*
Saves times	It gives more choice	0.4295	0.3669	0.4882	<.0001*
Saves times	It gives me better deals	0.5320	0.4765	0.5833	<.0001*
Saves times	Buy personal items without inhibition	0.3852	0.3201	0.4467	<.0001*

\*Significant

## 6. RELATIONSHIP BETWEEN PRIORITY INDICATORS

The above table shows the inter correlation between seven priority indicators. It is observed that the 65.5 percentage of relation has occurred between “on line shopping gives me better deals Vs Flexibility of purchase/order” and lowest relation has occurred between “service offered and Saves shopping times”. The above pair-wise correlation table clearly indicates that all the pairs has significant relationship and scored above 0.30


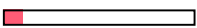
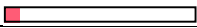
**Table No.4. Communalities for Priority indicators**

Priority Indicators	Initial	Extraction
Product information	1.000	.689
Service Offered	1.000	.646
Flexibility of purchase/order	1.000	.651
It gives more choice	1.000	.616
It gives me better deals	1.000	.708
Buy personal items without inhibition	1.000	.522
Saves times	1.000	.407

Extraction Method: Principal Component Analysis.

The communalities value indicated that the common variance shared by factors with given variables. In other words it shows that the extent to which an item correlates with all other items. The higher the communalities are better. Higher communality value indicated that larger amount of the variance in the variable has been extracted by the factor solution. For better measurement of factor analysis communalities should be 0.4 or greater. It is found that all seven priority items of e-shoppers behaviour drivers were score more than 0.4.

**Table No. 5. Initial Eigen values for Predictor indicators**

Number	Eigenvalue	Percent	Percent	Cum Percent	ChiSquare	DF	Prob>ChiSq
1	4.2376	60.537		60.537	2477.44	17.789	<.0001*
2	0.7296	10.423		70.960	253.230	17.869	<.0001*
3	0.6379	9.112		80.073	141.348	12.579	<.0001*

Number	Eigenvalue	Percent	Percent	Cum Percent	ChiSquare	DF	Prob>ChiSq
4	0.4355	6.222		86.294	28.399	8.114	0.0004*
5	0.3344	4.777		91.071	2.454	4.452	0.7171
6	0.3265	4.665		95.736	1.390	1.651	0.4115
7	0.2985	4.264		100.000	0.000	.	.

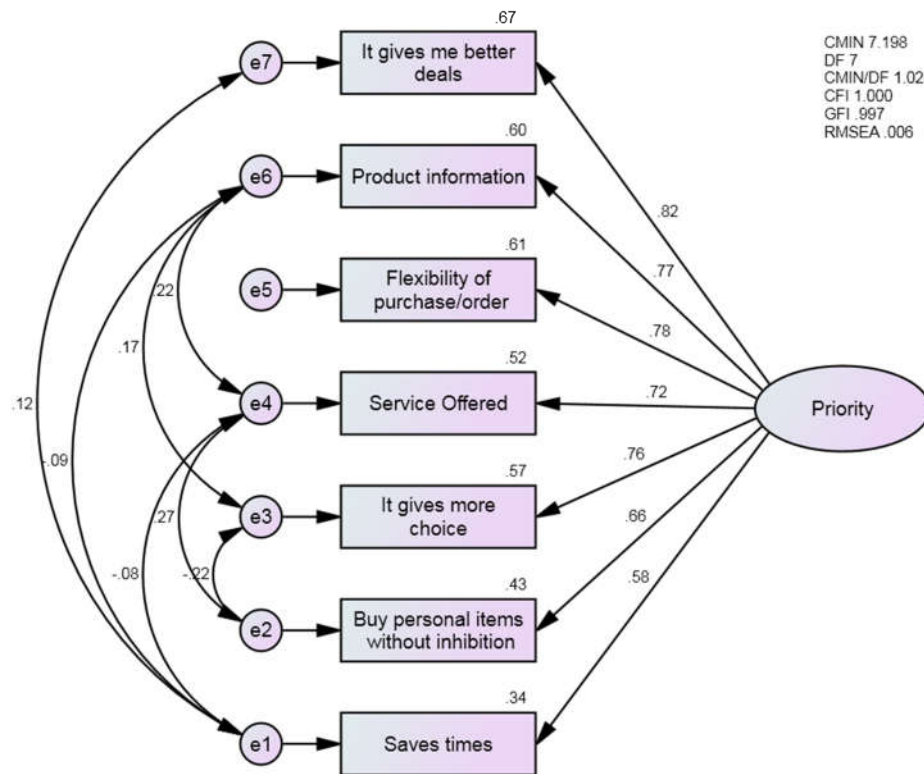
Principal Components: on Correlations

The Initial Eigen value for seven priority indicators were summarised in the above table. The table also indicates the Chi-square and corresponding to its significant value. It is noted that the eigen value more than 1 are taken into account for further analysis. The above table clearly indicates that one component eigen value has attained more than one.1. More over the above table also indicate that the eigen value for the first component was 4.2376 with a chi-square value 2477.44 significant at 0.001 percent level. The eigen value for the first factor is quite a bit larger than the eigen value for the second factor (4.237 Versus 0.729). Additionally, the first component accounts for 60.53 percentage of the total variance. It are concluded that by overall the scale items are unidimensional.

**Table No.6. Component Martix for Priority indicators**

Priority Indicators	Component
	1
It gives me better deals	.841
Product information	.830
Flexibility of purchase/order	.807
Service Offered	.804
It gives more choice	.785
Buy personal items without inhibition	.722
Saves times	.638
Extraction Method: Principal Component Analysis.	
a. 1 components extracted.	

Since, one component was extracted from the seven priority indicators, there is no need for Rotated component matrix and the Extraction sums of Squared loadings shows the similar result extracted in the initial eigenvalues. The above table clearly indicates the factor score for each prioiry indicators. The highest component score of .841 was achieved in “It gives me better deals” it is also noted that all the seven e-shoppers priority indicators over their drivers of e-shopping .



CMIN 7.198  
 DF 7  
 CMIN/DF 1.028  
 CFI 1.000  
 GFI .997  
 RMSEA .006

Figure No.1 Path diagram for Priority factor of E-shoppers

This exploratory model identified one factor comprises all the seven priority indicators. This priority factor achieved a acceptable reliability score (.889). it is the process of create a measurement model to construct the structural model. The most influential indicators in the emerging priority dimension were analysed below. It is important to know the model fit indices for the factors entered in the measurement model to carry out the structural model. The model fit indices clearly indicates whether the entered factor were exactly fitted within the framework. The CMIN/DF and RMSEA value was more perfect to predict the measurement model.

Table No. 7. Regression Weights for Priority factor

Indicators	Latent	Estimate	S.E.	C.R.		Sig.
Product information	Overall Priority over E- shopping	.633	.040	15.954	.580	0.000
Service Offered		.735	.042	17.526	.655	0.000
Flexibility of purchase/order		.900	.044	20.685	.755	0.000
It gives more choice		.769	.039	19.729	.721	0.000
It gives me better deals		.893	.040	22.300	.783	0.000
Buy personal items without inhibition		.843	.040	21.237	.772	0.000
Saves times		1.000	Reference Point	.819	0.000	

## 7. RESULTS AND DISCUSSION

The above table shows the standardized and unstandardized estimate for the seven priority items. It is observed that the significant value clearly indicates that all the seven priority indicators predict the e-shoppers priority indicators. It is found that among seven priority indicators, “Online shopping gives better deals” highest standardized weights denote that indicator “E-shopping gives better deals” has strong impact indicators than others. The probability of getting a critical ratio as large as 20.685 in absolute value is less than 0.001. The regression weight for Priority factor in the prediction of “Better deal” is significantly different from zero at the 0.001 level (two-tailed). It is concluded that when priority factor of E-shoppers overall priority over e-shopping goes up by 1, the indicators “Online shopping deals” goes up by .819.

## 8. CONCLUSION

The findings clearly indicates that out of six priority indicators the e-shoppers highly influenced by the deals offered by the online traders. It is most significant fact that e-shoppers easy attracted by the offers and deals periodically announced by the online traders. It is also found that the product information is the least influenced priority criteria. It is more important the certain priority given by the online shoppers while they made up their decision over online shopping. Once the Indian online retail traders understand their customer priority then they will retain their market for long period.

### *References:*

- [1] Butler, P. and Peppard, J, (1998), “Consumer purchasing on the internet: Processes and prospects”, *European Management Journal*, vol. 16, no. 5, pp.600-610.
- [2] Chen, R. and He, F, (2003), “Examination of brand knowledge, perceived risk and consumers’ intention to adopt an online retailer”, *Total Quality Management & Business Excellence*, vol. 14, no. 6, pp. 677.
- [3] Hermes, N., (2000) “Fiscal decentralisation in developing countries”, *Review of medium\_ being\_reviewed title\_of\_work\_reviewed\_in\_italics*. *De Economist*, Vol. 148, No. 5:690-692
- [4] Jackie Gilbert Bette Ann Stead (2001); *Ethical Issues in Electronic Commerce*; *Journal of Business Ethics*; Vol.34, 2001; pp.75-85.
- [5] Kotler, Philip, and Gary Armstrong. 2010. *Principles of Marketing*. Upper Saddle River: Pearson Education
- [6] Maignan, I. and Lukas, B., (1997), “The nature and social uses of the internet: A qualitative Investigation”, *The Journal of Consumer Affairs*, vol. 31, no. 2, pp. 346-371.
- [7] Robinson, H., Dall’Olmo, R., Rettie, R., & Rolls-Willson, G. (2007). The role of situational variables in online grocery shopping in the UK. . *The Marketing Review*, 7(1), 89-106.
- [8] Sahney, S., Shrivastava, A., & Bhimalingam, R. (2008). Consumer Attitude Towards Online Retail Shopping in the Indian Context. *ICFAI Journal of Consumer Behavior*, 3(4), 36-42.
- [9] Whysall, P., (2000), “Retailing and the internet: a review of ethical issues”, *International Journal of Retail & Distribution Management*, vol. 28, no. 11, pp.481-489.