



## **Factors Influencing Online Shopping Behavior of Consumers in Tier I and Tier II Cities of South India: Analysis Using Structural Equation Modeling.**

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### **ABSTRACT**

Shopping through online has become the way of life of people. The aspects such as convenience, speed are the major factors influencing the consumers to go for online shopping. The trend is upward and the companies involved in online business generate greater revenues and even large corporate houses tend to shift their attention towards their attention to this medium. Because the reach of business given by the medium is very high. The easiest way to reach large customer base in a short span of time. Understanding the consumer behavior becomes mandatory for any business involved in online.

***Key words: Online shopping, consumer behavior, Structural Equation Modeling***

### **INTRODUCTION**

Online shopping has become the way of life of the people. It has grown significantly in all the product categories. The existing large corporate houses adopted online mode to reach the large base of customers and start ups take up this way as a smart way to do business. Online shopping became popular during the Internet boom in 1999-2000. Amazon.com, the online bookstore founded by Jeff Bezos, created history by becoming the first bookstore with a presence only on the Internet.

Following the success of Amazon, many bookstores with a physical presence also created an online presence on the Internet. Later, portals such as Yahoo.com and MSN.com also started online shopping channels where people could buy more than just books. Closer home, portals such as Indiatimes.com and Rediff.com came up with similar options for the Indian consumer.

Amazon.com, a global giant adopting a novel strategy to reach their customers quickly by introducing flight services to deliver the goods. In India, there are lots of companies generating high revenues out of their online business. The notable are flipkart, myntra, olx, jabong, naaptol, yebhi and the list grows every day.

### **SIGNIFICANCE OF THE PRESENT STUDY**

The online medium is convenient, faster and sometimes cheaper. The demand is growing. People tend to move this shopping mode quickly. For instance, rather than standing in a long queue and waiting for your turn to purchase a ticket, people are finding it simpler to log on to a website and buy it. In some instances, the consumer may have to pay a premium for an online purchase but it is still preferred because the convenience factor is higher.

For instance, if a consumer wants to buy movie tickets online you may have to shell out a small premium over the actual price of the ticket but because of its convenience, people are opting for it. Buying or placing an order online is also useful when you need to send a gift to a friend who is staying in a different city or country. For instance, you can order flowers to your friend in New York on her birthday by placing an order for it on the Internet from your home in Mumbai.

### **OBJECTIVE OF THE STUDY**

The present study is an attempt to find out the factors influencing the shopping behavior of the consumers in Tier I and Tier II cities of South India.

### **REVIEW OF THE LITERATURE**

**Richa (2012)** conducted a study in six major cities across India reports that the demographic factors such as age, income, education, marital status, gender, family size and ability to use the internet influences the consumer behavior and impacts significantly.

**Khan and Shaikh (2012)** pointed out that the economy goes through constant change and forces like liberalization and globalization also have consistent repercussions on the way business is conducted. The internet is being put to use in several newer ways with every new day. People are getting more and more informed, aware and confident about how the internet can make their lives more convenient and comfortable too Indian consumers are very different from their Western counterparts. There is a visible change in the younger age group which is becoming more and more computer literate and increasingly aware of hi-tech gadgets like lap-tops, mobiles phones and i-pods. The survey shows the preference of electronic media over print media and how the internet is a very important part of the

electronic media. Majority of the respondents work on the internet either from their workplace or their home and consider speed/cost as one of the most important criteria of their working.

**Khan and Shaikh (2012)** E-Shopping has been regarded for some time now as the best thing to have happened to the modern world consumer, yet Indians are still a little wary of making it their way of life. Its services and growth factors are still being doubted as effective replacements for real time purchases. All in all, online shopping has yet to come of age in India. As low as 11.87% of the respondents preferred to use the internet for their shopping needs. The main agenda for E-marketers is to focus on a suitable target audience - the youth so as to ensure that they start believing in the power of the internet in their buying behaviour. There is a minor change in attitude since respondents have rated a high score for websites that provide adequate product information followed by the next rank given to website design and nature. Naturally, interactive websites fulfil these requirements and therefore play a major role in this scenario.

**Delafrooz et al. (2011)** justifies that the consumers will hold a more positive attitude towards online shopping, that they will follow it up with purchase intentions. Moreover, the findings of their study show that trust and security were the main factors that prevent consumers from shopping online. More specifically, consumers' perception regarding the trust for online purchasing exhibited significant relationships with their online buying intention in the study.

In brief, online retailers need to ensure that online shopping process through their websites should be as easy, simple and convenient as possible for consumers to shop online. The websites should also be designed in a way such that they are not too confusing for potentially new buyers, particularly among consumers who may not be familiar with this new form of shopping. In addition, online retailers need to provide a competitive price for products in order to attract online shoppers to their websites and encourage them to make purchase decisions

**Khare and Singh (2010)** have done a study on antecedents to Indian customers attitude towards online insurance services. The research study states that purchasing through the internet requires trust, because customers have to provide their personal details. If insurance companies are able to provide assurance to the customers, it would lead to increased use of the online services. Indian customers' attitude about security concerns is

related to payment and information use. Indian customers' attitude towards online insurance can be enhanced by improving communication about online insurance services. The results show that information availability and accessibility factors do not play any major role in customers' attitude formation. Lack of proper information about product through website makes customers prefer more of face-to-face interactions with the insurance agent. Online shopping websites should not overload customers with too much information. Information should be customized according to customer requirements. Too much instructions and information on website may make the customers wary about trying the website for transactions. The website should have features that facilitate information about products in which customers are interested and according to the information stored about the customers.

## **FACTORS TAKEN FOR THE STUDY**

### **Perceived Usefulness**

The degree to which a person believes that using online shopping would improve his or her shopping experience.

### **Perceived Ease of Use**

The degree to which a person believes that online shopping would be free of efforts.

**Behavioral Intention to Use:** The cognitive representation of a person's readiness to do online shopping, and it is considered to be the immediate antecedent of actual behavior.

### **Attitude Towards Using Internet:**

The user's evaluation of the desirability of employing actual behavior of online shopping.

### **Knowledge**

The level of information the shoppers have for actual behaviour of online shopping.

**Security/Privacy:** Whether the shopper attitudinally feels online sellers secure and protective for his privacy.

### **Actual Behavior**

The shopper's willingness to do online shopping.

### **Hypotheses:**

The following research hypotheses were framed from various literatures

H1: Knowledge influences Perceived Usefulness

H2: Knowledge influences Perceived Ease of Use

H3: Perceived ease of use influences Perceived Usefulness

- H4: Perceived ease of use influences Attitude
- H5: Perceived usefulness influences Attitude
- H6: Perceived Usefulness influences Intention to Use
- H7: Attitude influences Intention to Use
- H8: Intention to Use influences Actual Behavior
- H9: Security influences Actual Behavior

## **RESEARCH METHODOLOGY**

**Sampling element :** Individual shoppers

**Sample Size :** 612 respondents

### **Geographical extent:**

Three Tier I cities (Chennai, Bangalore, Hyderabad) and Seventeen Tier II cities (Coimbatore, Tirupur, Madurai, Trichy, Salem, Belgaum Hubli, Mangalore, Mysore, Vijayawada, Warangal, Visakapatnam, Guntur, Calicut, Cochin, Trivandrum and Pondicherry) in South India were taken for this study.

These cities are representative of the target universe of this research as geographically they are dispersed across south India. The researcher has many potential pre-authenticated respondents which will improve the overall quality of the research. These cities have already experienced significant developments in organized retail and due to high penetration of internet; there is higher probability of receiving reliable responses contributing to the overall reliability.

### **Data collection**

Primary data was collected with the help of a questionnaire. The respondents were explained about the purpose of study in brief and handed over the questionnaire for a week. The purpose of giving a week time to the respondents is to enable them to understand the questionnaire and fill up properly.

### **Tools used:**

1. Correlation
2. Confirmatory Factor Analysis

Confirmatory factor analysis is used for confirming the groups of variables discussed in the questionnaire. In the below table, factor loadings of individual question (indicator variables) are higher for their parent construct than the neighbor constructs. So it is inferred that the factors selected are useful for modeling.

### 3. Structural Equation Modeling

SEM is a widely used method of multivariate path regression model in which interrelationships between the constructs and functional relationship of the indicator variables with construct variables are represented by an arrow diagram and calculated by set of equations.

There are two types of SEM such as Covariance Modeling (AMOS, Lisrel,.) and Path Modeling (Visual PLS, Smart PLS,.). In this research, path modeling with partial least square is used.

### 4. Partial Least Square (PLS)

Partial Least Square (PLS) is a family of alternating least squares algorithms, or ‘prescriptions,’ which extend principal component and canonical correlation analysis. The method was designed by Wold (1974, 1982, 1985) for the analysis of high dimensional data in a low-structure environment and has undergone various extensions and modifications. PLS delivers latent variable scores, i.e. proxies of the constructs, which are measured by one or several indicators (manifest variables).

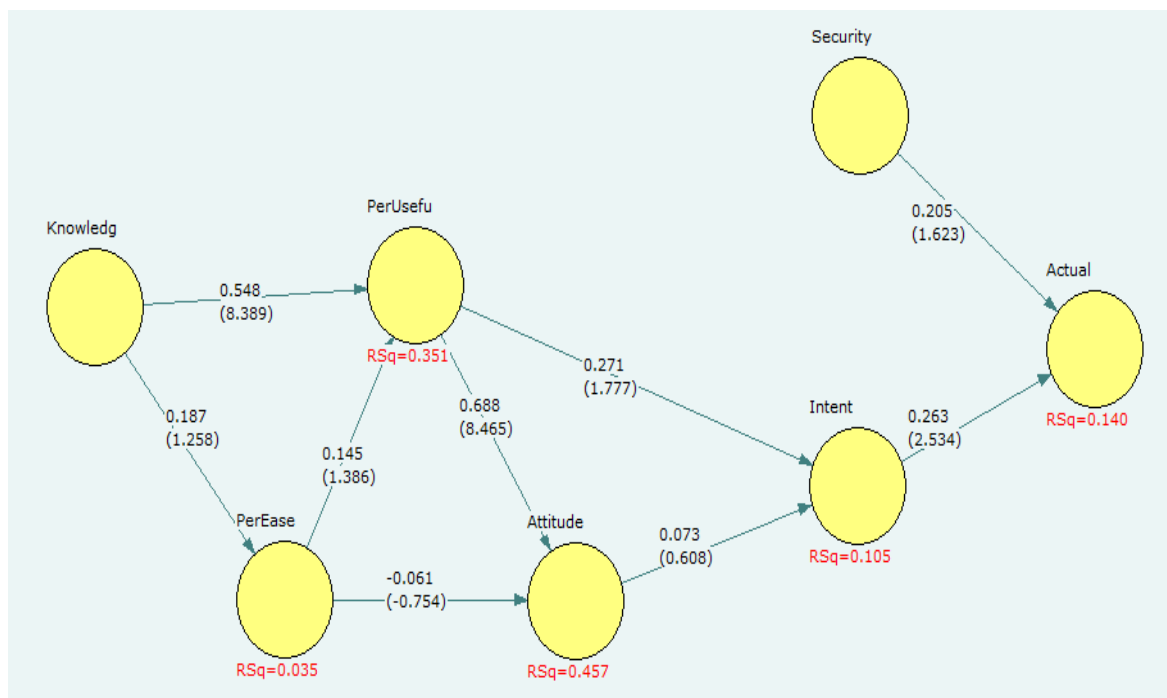
PLS path modeling avoids small sample size problems and can therefore be applied in some situations when other methods cannot. PLS path modeling can estimate every complex model with many latent and manifest variables. PLS path modeling has less stringent assumptions about the distribution of variables and error terms. PLS can handle both reflective and formative measurement models

### 5. Visual PLS

Visual PLS is free and open source software ([www.2.kuas.edu.tw/prof/fred/vpls](http://www.2.kuas.edu.tw/prof/fred/vpls)) for doing computations in structural equation modeling by partial least square method for solving regression coefficients. It (Fu, 2006a) is a graphical user interface for *LVPLS* running in the Windows environment which enables the analysis of raw data only. The path model is specified by drawing the latent variables and by assigning the indicators in a pop-up window.

Based on the graphical model, the program produces a separate input file. Different formats of input data are supported. The results are offered as output plain text file as well as in HTML/Excel format. In addition, a path model showing the estimated parameters is displayed. Beyond blindfolding and jackknifing, bootstrapping has been integrated. Special support for specifying moderating effects and second order factors is offered.

Figure 1: Model explaining the structural relationship among the construct variables



Note: Path coefficients are given on the arrow lines. T test statistic values are given in the parenthesis. Table value for the t test is 2.00 for the level of significance 5%. X --> Y means X is independent variable and Y is dependent variable.

Table 1

Structural Model-Boot Strap					
Hypothesis	Entire Sample estimate	Mean of Subsamples	Standard error	T-Statistics	Result
Knowledge->Perceived Usefulness	0.5480	0.5117	0.0653	8.3894	S
Knowledge->Perceived Ease of Use	0.1870	0.2936	0.1487	1.2577	NS
Perceived Ease of Use->Perceived Usefulness	0.1450	0.1514	0.1046	1.3864	NS
Perceived Ease of Use->Attitude	-0.0610	-0.1224	0.0809	-0.7544	NS
Perceived Usefulness->Attitude	0.6880	0.6039	0.0813	8.4648	S
Perceived Usefulness->Intention to Use	0.2710	0.2087	0.1525	1.7765	NS
Attitude->Intention to Use	0.0730	0.1544	0.1201	0.6078	NS
Intention to Use->Actual Behavior	0.2630	0.1793	0.1038	2.5343	S
Security->Actual Behavior	0.2050	0.2991	0.1263	1.6234	NS

**Result of Boot Strap Estimate**

**Table 2**

<b>Measurement Mode (Loading)-Boot Strap</b>					
<b>Factors</b>		<b>Entire Sample estimate</b>	<b>Mean of Subsamples</b>	<b>Standard error</b>	<b>T-Statistic</b>
<b>Perceived Ease of Use</b>	Q5.20	0.3769	0.5592	0.3032	1.2431
	Q5.21	0.8098	0.7461	0.5260	1.5397
	Q5.22	1.0832	0.6281	0.3749	2.8892
	Q5.23	0.7025	0.6097	0.4100	1.7134
	Q5.24	0.7558	0.5627	0.2797	2.7019
	Q5.25	0.2727	0.6468	0.3493	0.7807
<b>Intention to Use</b>	Q5.26	1.0526	1.1762	0.2546	4.1340
<b>Perceived Usefulness</b>	Q5.14	0.5242	0.5830	0.1917	2.7340
	Q5.15	0.6344	0.7781	0.2439	2.6015
	Q5.16	0.7983	0.7576	0.0505	15.8096
	Q5.17	0.8619	0.8057	0.0647	13.3195
	Q5.18	0.7838	0.7643	0.0411	19.0490
	Q5.19	0.7928	0.7892	0.0381	20.8178
<b>Knowledge</b>	Q5.35	0.7872	0.7931	0.0173	45.3968
	Q5.36	0.8720	0.8726	0.0154	56.7779
	Q5.37	0.7791	0.7692	0.0296	26.3472
	Q5.38	0.8051	0.8021	0.0240	33.6094
<b>Attitude</b>	Q5.27	0.6978	0.6959	0.0491	14.2106
	Q5.28	0.7394	0.7253	0.0411	17.9750
	Q5.29	0.7157	0.7130	0.0296	24.2091
	Q5.30	0.2044	0.2031	0.1088	1.8784
	Q5.31	0.0882	0.1238	0.0819	1.0771
	Q5.32	0.0512	0.0873	0.0599	0.8552
	Q5.33	0.5105	0.5073	0.0653	7.8134
	Q5.34	0.8012	0.8019	0.0258	31.1016
<b>Security</b>	Q5.39	0.2199	0.2451	0.1243	1.7684
	Q5.40	0.3707	0.5410	0.3924	0.9447
	Q5.41	0.5150	0.6064	0.2947	1.7475
	Q5.42	0.9038	0.7257	0.4719	1.9153
	Q5.43	0.8732	0.5437	0.3017	2.8947
	Q5.44	0.6394	0.5919	0.3624	1.7642
	Q5.45	0.6935	0.5883	0.3369	2.0588
	Q5.46	0.3362	0.4906	0.2710	1.2404
<b>Actual Behavior</b>	Q5.47	0.2939	0.8483	0.6595	0.4457
	Q5.48	0.7593	0.5653	0.3709	2.0472



Boot strap algorithm is a re-sampling method for creating pseudo population to do statistical testing of significance. It is a non-parametric method for deriving sampling statistics. In boot strap sampling the sub samples are selected with replacement procedure randomly from the given sample. From the below table, boot strap estimates of T-statistics values given. Most of the T-statistics are greater than the critical value 2 and it shows there is a significant regression of the construct variable on indicator variables.

**Table 3**  
Confirmatory Factor Analysis

<b>Factor Structure Matrix of Loadings and Cross-Loadings</b>							
Scale Items	Perceived Ease of Use	Intention to Use	Perceived Usefulness	Knowledge	Attitude	Security	Actual
Q5.20	<b>0.7295</b>	0.3821	0.6982	0.3664	0.5722	0.0733	0.2695
Q5.21	<b>0.7964</b>	0.4607	0.6912	0.4155	0.5878	0.1879	0.2834
Q5.22	<b>0.7528</b>	0.5799	0.6320	0.6153	0.4260	-0.0060	0.4346
Q5.23	<b>0.7180</b>	0.2063	0.5573	0.4606	0.4932	0.2382	0.3724
Q5.24	<b>0.7225</b>	0.4916	0.5475	0.6188	0.3858	0.1749	0.5634
Q5.25	<b>0.6454</b>	0.4925	0.6341	0.5772	0.5237	0.2368	0.4754
Q5.26	0.5968	<b>1.0002</b>	0.6254	0.5108	0.3413	0.0318	0.4774
Q5.14	0.5149	0.0187	<b>0.5502</b>	0.2007	0.6067	0.2418	0.1927
Q5.15	0.6596	0.3705	<b>0.7532</b>	0.4701	0.5224	0.1168	0.3914
Q5.16	0.6310	0.4869	<b>0.8162</b>	0.4692	0.5558	0.1007	0.3802
Q5.17	0.7296	0.5605	<b>0.8886</b>	0.5467	0.5836	0.1209	0.4524
Q5.18	0.7281	0.6356	<b>0.7955</b>	0.5036	0.5438	0.0018	0.4701
Q5.19	0.6724	0.6027	<b>0.7916</b>	0.5084	0.4903	-0.0394	0.5175
Q5.35	0.5473	0.3576	0.5240	<b>0.7877</b>	0.5044	0.2246	0.5164
Q5.36	0.5346	0.4788	0.4326	<b>0.8728</b>	0.3880	0.1974	0.4694
Q5.37	0.5949	0.3622	0.4966	<b>0.7797</b>	0.4706	0.2545	0.4431
Q5.38	0.5672	0.4650	0.4736	<b>0.8058</b>	0.3389	0.1166	0.4817
Q5.27	0.5650	0.4752	0.5450	0.4367	<b>0.6987</b>	0.2319	0.3990
Q5.28	0.5901	0.1647	0.5882	0.2833	<b>0.7404</b>	0.1665	0.1883
Q5.29	0.4138	0.2436	0.5063	0.3797	<b>0.7166</b>	0.1447	0.2202
Q5.30	0.0356	0.1338	0.1326	0.1619	<b>0.2047</b>	0.3684	-0.0362

Q5.31	-0.1494	-0.0293	-0.0226	0.0515	<b>0.0882</b>	0.4179	-0.1260
Q5.32	0.0181	0.1628	0.0446	0.1918	<b>0.0513</b>	0.2759	0.1544
Q5.33	0.1463	-0.0634	0.2161	0.2032	<b>0.5108</b>	0.2227	0.2317
Q5.34	0.4651	0.1648	0.4487	0.4798	<b>0.8019</b>	0.2143	0.3874
Q5.39	0.1985	-0.1385	0.1424	0.2744	0.3163	<b>0.6055</b>	0.0086
Q5.40	0.1800	0.0198	0.1533	0.1716	0.3678	<b>0.7769</b>	0.0055
Q5.41	0.1221	0.1020	0.0575	0.2934	0.1869	<b>0.8290</b>	0.1519
Q5.42	0.1996	0.1286	0.1306	0.2498	0.2179	<b>0.8318</b>	0.1591
Q5.43	0.3406	0.0987	0.2488	0.2494	0.2873	<b>0.7774</b>	0.0587
Q5.44	0.0553	-0.1405	-0.0249	0.1135	0.2476	<b>0.8224</b>	-0.0944
Q5.45	-0.0598	-0.1996	-0.1415	0.0097	0.1063	<b>0.6988</b>	-0.3368
Q5.46	-0.0224	0.0801	-0.0445	0.1288	0.0499	<b>0.5132</b>	-0.2723
Q5.47	0.4223	0.3702	0.3039	0.4596	0.3563	0.1508	<b>0.7900</b>
Q5.48	0.5197	0.4609	0.5650	0.5715	0.3680	-0.0841	<b>0.9601</b>

### Reliability and Validity of the Visual PLS Model

Since overall Cronbach alpha and composite reliability coefficients are higher than 0.6, reliability of the model is proved. Convergent validity is justified with AVE values of the constructs in the model. Few constructs have lesser AVE values (<0.5). So the model convergent validity is questionable. The predictability of the model is not much good.

Table 4

<b>Reliability and AVE</b>			
<b>Construct</b>	<b>Composite Reliability</b>	<b>AVE</b>	<b>Cronbach Alpha</b>
Perceived Ease of Use	0.847076	0.518371	0.824910
Intention to Use	1.107893	1.107893	0.000000
Perceived Usefulness	0.877394	0.550048	0.859383
Knowledge	0.885153	0.658788	0.826763
Attitude	0.725076	0.312573	0.672452
Security	0.806618	0.379136	0.881165
Actual Behavior	0.453426	0.331455	0.734412

Discriminant validity is justified with  $r^2$  (square of correlation coefficients) with AVE values. It is expected that  $AVE > r^2$ . From the two tables, all AVE values of relative constructs with the other constructs. Discriminant validity is ensured. Since the overall model fit is 0.14 which is only 14% of the independent variable (Actual Purchase)

Table 5

<b>Correlation of Latent Variables</b>							
<b>Factors</b>	Perceived Ease of use	Intention to Use	Perceived Usefulness	Knowledge	Attitude	Security	Actual Behavior
Perceived Ease of use	1.000						
Intention to Use	-0.316	1.000					
Perceived Usefulness	-0.023	0.131	1.000				
Knowledge	0.391	-0.026	0.379	1.000			
Attitude	0.033	-0.048	0.261	0.314	1.000		
Security	-0.129	0.015	0.196	0.439	0.577	1.000	
Actual Behavior	0.024	-0.067	0.236	0.272	0.683	0.499	1.000

## Results

From Table 1, it is inferred that the following hypotheses are accepted since the significance value is greater than 2. Knowledge influences perceived usefulness, Perceived usefulness influences Attitude, Intention to Use influences Actual Behavior.

The following hypotheses are rejected, since the significance value is less than 2. Knowledge does not make any influence on Perceived Ease of Use, Perceived ease of use does not make any influence on Perceived Usefulness, Perceived ease of use does not influence on Attitude, Perceived Usefulness does not influence on Intention to Use, Attitude does not influence on Intention to Use and Security does not make any influence Actual Behavior.

## Limitations of the study

The geographical extension of the study area is limited to South India. So the study results cannot be generalized for the whole India.

## **CONCLUSION**

The study presents the fact that the consumers have more knowledge in using online and the perceived usefulness of the online shopping is high. Perceives usefulness of the online medium influences the consumers' attitude towards making shopping through online. Intention to use the internet strongly influences the actual buying behavior. The other factors do not contribute significantly to the study.

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