

# DOMINANT CLUSTERS OF ONLINE SHOPPING PURCHASE INTENTION: A DISCRIMINANT ANALYSIS APPROACH

<sup>1\*</sup>Easwari. G. P,<sup>2</sup>Dr. V. Raman,<sup>3</sup>P. M. Rameshkumar

**ABSTRACT**--The Present study was aimed to explore different types of cluster groups with respect online shopping purchase intention of women consumers in Chennai city. The present study adopted exploratory and descriptive **research** design and survey method to gather primary responses from women consumers. The result indicates that three dominant cluster groups has been significantly differentiated with two significant discriminant functions. The cluster groups such as, low intention group, moderate intention group and higher intention group was emerged out of five factors such as, accessibility, convenience, consideration, website design and shopping comforts of online shopping. Further, the researchers suggested to enhance the experience and satisfaction of the online shoppers to increase the growth of the e-commerce industry.

**Key Words**-- Online Shopping, Comforts, Convenience, Purchase Intention and Discriminant Analysis Approach

## I. INTRODUCTION

E-retailers in India are facing many problems to offer a personalised and good service experience to customers. There is a need to have effective visual communication and direct communication understanding between customers and e-retailers on online business. The socio-economic conditions of the customers and attitudes of the customers need to be understood by the e-retailers to enhance customer satisfaction in their business (Fenech, & O'Cass, 2001; O'Cass, & Fenech, 2003; Anderson, & Swaminathan, 2011). The optimum utilisation of competitive advantage of the market is very imperative to face the online customers. The scale of operations and transaction in e-commerce is increasing everyday due to convenience and comfort of the customer while shop through online platform (Gunasekaran, & et al., 2002; Joines, & et al., 2003; Liu, & et al., 2008; Pregoner, & et al., 2020; Hung, & et al., 2018). The personalities of the customers need to be understood to treat the customers for the purpose of enhancement in customer satisfaction and customer delight in e-commerce business (Tan, & et al., 2002). The attitude and personality of the customer is the two imperative dynamics are to be clearly predicted and understood by every e-retailer to attract and retain the customers in online business (Tasi, & et al., 2006). The perception of customers has become more important vital aspect to understand the customer needs, wants, expectations and behaviour towards goods sold via online business platform. There many large-scale studies have been conducted so far to understand the characteristics of the customer towards online shopping and online

---

<sup>1</sup> \*Ph.D Part Time Research Scholar, Department of Corporate Secretaryship, Dharmamurthi Rao Bahadur Calavala Cunnan Chetty Hindu College, Chennai, India, bmccc16@gmail.com

<sup>2</sup> Associate Professor and Head (Retd.), Dharmamurthi Rao Bahadur Calavala Cunnan Chetty Hindu College, Chennai, India

<sup>3</sup> Guest Lecturer, Department of Corporate Secretaryship, D G Vaishnav College (Autonomous), Chennai, India, pmrameshk@gmail.com

business. The studies related to use of big data analytics and predictive analytics to understand the customers are the need of the hour. In connection with online shopping trend, there is a need to understand the customer perception and attitude to utilise the opportunities to capitalise the competitive advantage.

## II. LITERATURE REVIEW

Osly Usman and Isfanz Ainu Zillah (2020) studied the effect of customer satisfaction, experience, trust and e-word of mouth on purchase decision of the customers towards online shopping and result indicates that structural equation modelling supports the influence of customer satisfaction, trust and e-word of mouth positively and significantly on purchase decision of the consumers. Intan W. Sakti and Ratih Hurriyati (2020) examined the growth of online shopping in preview with adoption of technology and result reveals that enhancement in the socio-economic conditions of the shoppers have significant impact in online transaction increase over a decade. Vaibhav Misra and Anubha Vashisht (2019) made an attempt to conduct an exploratory study with reference to Lucknow city consumers to understand their behaviour towards online shopping. The researchers found the information search and electronic word of mouth have significant and positive influence on online shopping adoption in Indian context. Maryati and Erika (2019) measured the relationship between online shopping sites advertisement on buying and selling interest of online shoppers in India. The researchers found that there is a significant and positive influence of with respect to online shopping site advertisements on buying and selling behaviour of individual customers. They also suggested to effectively use the online shopping sites advertisements to indoctrinate the minds of the customers towards purchase of goods in online platform rather than traditional purchase. FabihaEnamet.al,(2020) made an attempt to understand the online shopper's behaviour among Bangladeshi people and they found that youngsters those who uses Facebook and follows brand pages of their favourite brands have higher and positive behaviour towards online shopping in Bangladesh. Bandar Alharthey (2020) conducted a study to examine the role of online trust on intention to shop in online among Saudi Arabian consumers and found that online trust have positive and significant impact on the online shopping intention among respondents in the study area. Ni LuhPutuDesiArnilawati<sup>et.al.</sup>, (2020) carried an empirical study to examine the mediating role of risk in perception of customers towards the influence on trust and consumer experience. The result of the study proves that perception on risk and online shopping experience have significant and positive influence whereas, trust do not have significant influence on purchase intention. DibasGaudel (2019) conducted a study to explore the influence consumer attitude towards online shopping among Nepali consumers and result reveals that convenience, security and time saving are the major key factors influencing the consumers' attitude towards intention to shop in online platform. AnurajPandy and Jitesh Parmar (2019) have carried systematic investigation to explore the significant predictors of consumer's attitude towards online shopping buying behaviour in Kanpur city of India. The application of non-parametric tools supports that demographic factors of customers, social factors, social media, website design, situational factors, product characteristics and payment option are the key factors of determinants towards online shopping attitude of consumers in Indian context. Sadraddin Azami (2019) made an attempt to find the factors affecting consumer purchase behaviour in online shopping of Turkey consumers. The researchers found that web environment, characteristics of the product, promotional offers have significant and positive influence on online shopping behaviour of Turkey consumers whereas, price, security and confidence do

not have significant influence on online shopping behaviour in the study area. Shantharam *et.al*, (2019) stated that social media marketing plays an imperative role in today's consumers purchase decision due to growth of social media networking sites usage. Further, this finding was support in previous research studies Balaji and Sreenivasa Murthy (2019); Sasikumar and Balaji (2020) and Suresh *et.al*, (2020) that growth of smart phone, internet, social media networking sites has provided lot of opportunities to electronic business in recent years.

### ***Statement of the Problem***

There is need of the hour to understand the e-commerce business in India to capitalise the available opportunities to overcome the competitive advantage. This study aims to answer the factors affecting the consumer behaviour towards purchase decision on online shopping goods and products in their regular life. especially, among women consumers to attract and target the market for women consumers. This study will give solutions to improve the business performance of online shopping retailers to understand the consumer perception, attitude and behaviour to devise appropriate strategies.

### ***Scope of the Study***

The present study was limited to online shoppers in Chennai city and purchases products through online shopping sites regularly in their daily life. The present study was limited to only women consumers in order to fulfil the research gap that exclusive study on women to understand and predict behaviour towards online shopping. The present study was limited to consumers perception towards website design, consumer comforts, trust and other aspects related to online shopping experience.

### ***Aims of the Study***

The present study aims to understand the demographic profiles of the online shoppers in Chennai city of Tamil Nadu and to explore the significant predictors and factors affecting the consumer behaviour towards online shopping purchase intention.

## **III. RESEARCH METHODOLOGY**

The present study was exploratory and descriptive research design and survey method was adopted to collect primary responses from online shoppers residing in Chennai city of Tamil Nadu. The survey method and non-probability convenience sampling technique was adopted to select the respondents for the study. The structured questionnaire with two parts has been finalised to collect the primary data from online shoppers in the study area. To study the consistency and reliability of the structured questionnaire, Cornbach's Alpha reliability co-efficient was used and value being 0.852 shows that scales are consistent and highly reliable.

### ***Statistical Tools and Software Used for the Study***

The present study was adopted SPSS software package, Version 22.0 and primary data collected were subjected to analysis and tools such as, percentage analysis, descriptive statistics, One-Way Analysis of Variance, cluster analysis and discriminant analysis has been applied to draw meaningful solutions to the research problem selected for the study.

#### IV. DATA ANALYSIS AND INTERPRETATION

The primary data collected from women online shoppers in Chennai city were subjected to data analysis using SPSS Version 22.0 and statistical tools such as, percentage analysis, descriptive statistics, cluster and discriminant analysis has been applied in the present study. The results are presented and tabulated in Table 1 to Table 3. The demographic profiles of the respondents were identified through percentage analysis and results presented in Table 1.

**Table – 1: Demographic Profiles of the Respondents**

Demographic Profile		Frequency	Percentage	
Monthly Income Level (In Rsl.)				
<Rs.10,000		12	4.9	
Rs.10,000 to Rs.30,000		60	24.4	
Rs.30,000 to Rs.50,000		144	58.5	
>Rs.50,000		30	12.2	
Amount Spending in Online Shopping (Rs. In Monthly)				
<Rs.1,000		24	9.8	
Rs.1,001 to Rs.2,000		30	12.2	
Rs.2,001 to Rs.3,000		144	58.5	
Rs.3,001 to Rs.4,000		28	11.4	
>Rs.4,000		20	8.1	
Descriptive Statistics	Minimum	Maximum	Mean	Std. Deviation
Age (In Years)	19.0	62.0	29.203	7.372
Average Use of Internet in a Week (In Nos of Time)	2.0	10.0	6.927	1.662

Table 1 indicates that majority of women online shoppers are earning monthly income of Rs. 30,000 to Rs. 50,000 (58.5%) and they spend Rs. 2,000 to Rs. 3,000 (58.5%) every month towards online shopping purchase. The descriptive statistics indicates that average age of the respondents is 29.203 years (S.D = 7.372 Years) ranges from 19 years to 62 years of age. Further, on an average 6.927 times (S.D = 1.662) they shop during the month in online platform and thus, ranges from 2 times to 10 times per month.

**Table – 2: Descriptive Statistics and Test of Normality**

Determinants	No. of Items	Mean	SD	Variance	Skewness (Std. Error = 0.155)	Kurtosis (Std. Error = 0.309)	Kolmogorov-Smirnov Statistic (df = 246)	Shapiro-Wilk Statistic (df = 246)	Cronbach's Alpha Reliability
Accessibility Factor	4	4.008	0.700	0.490	-0.853	0.482	0.147**	0.921*	0.859
Convenience Factor	5	3.533	0.773	0.597	-0.418	-0.235	0.112**	0.970*	0.856
Consideration Factor	3	3.856	0.667	0.445	-0.503	0.352	0.138**	0.954*	0.769
Website Design Factor	4	4.154	0.512	0.262	-0.165	-0.252	0.139**	0.954*	0.768
Comfort Factor	3	4.466	0.550	0.302	-0.941	0.307	0.192**	0.858*	0.742

a. Lilliefors Significance Correction

\*\*1% Level of Significance

Table 2 shows that mean values in descriptive statistics of the online purchase intention factors such as accessibility, convenience, consideration, website design and comfort are higher than standard deviation values (S.D is Less than 1/3rd of Mean) and it proves that selected constructs have robustness in the distribution of the selected constructs of the study. The Kolmogorov-Smirnov Test of Normality and Shapiro-Wilk Test of Normality have been applied to examine the normal distribution of the data and p-values of less than 0.05 shows that factors such as accessibility, convenience, consideration, website design and comfort has normal distribution in it. Further, in order to test the consistency and reliability of the instrument, Cronbach's Alpha reliability co-efficient was used and it has and result supports that scales are highly reliable and consistent in nature.

**Table – 3: Cluster Groups of the Respondents based on the Online Shopping Purchase Intention Factors**

Variables	Discriminant Coefficient		Discriminant Loadings		Low Adopter	Moderate Adopter	High Adopter	Tests of Equality of Group Means		ANOVA	
	Function 1	Function 2	Function 1	Function 2	Mean (SD)	Mean (SD)	Mean (SD)	Wilks' Lambda	F-Value (df = 2, 243)	Sig.	F-value (df = 27, 218)
											P-Value
Accessibility Factor	0.861	-0.158	<b>0.654*</b>	-0.027	4.346 (0.367)	3.273 (0.536)	4.446 (0.402)	0.402	181.040	0.000	2.0353

Convenience Factor	-0.051	0.957	<b>0.439*</b>	-0.034	2.712 (0.566)	3.502 (0.521)	4.170 (0.452)	0.431	160.18 2	0.00 0	1.978 4	0.00
Consideration Factor	0.542	0.304	<b>0.430*</b>	-0.191	3.686 (0.593)	3.519 (0.644)	4.297 (0.475)	0.728	45.346	0.00 0	3.791 0	0.00
Website Design Factor	0.462	-0.158	0.086	<b>0.912*</b>	4.478 (0.425)	3.715 (0.404)	4.326 (0.359)	0.588	85.154	0.00 0	1.959 5	0.00
Comfort Factor	0.238	0.024	0.255	<b>0.307*</b>	4.696 (0.358)	3.992 (0.553)	4.739 (0.327)	0.598	81.558	0.00 0	4.010 0	0.00

(WilksLambda: Test of Function(s) = 1 through 2 = Wilks' Lambda = 0.087; Chi-square = 587.302, df = 10, Sig. = 0.000)

(WilksLambda: Test of Function(s) = 2 = Wilks' Lambda = 0.392; Chi-square = 225.856, df = 4, Sig. = 0.000)

Function – 1: Eigen Value = 3.481; Variance = 69.2%; Canonical Correlation = 0.881

Function – 2: Eigen Value = 1.553; Variance = 30.8%; Canonical Correlation = 0.780

#### Test Results

Box's M = 128.140; F - Approx. = 4.143; df1 = 30; df2 = 164190.108; Sig. = 0.000;

*Tests null hypothesis of equal population covariance matrices*

\*Largest absolute correlation between each variable and any discriminant function

#### Accuracy of Respondents Classification

Cluster Number of Case		Predicted Group Membership			Total	
		Low Adopter	Moderate Adopter	High Adopter		
Original	Count	Low Adopter	66	2	0	68
		Moderate Adopter	0	86	0	86
		High Adopter	2	4	86	92
	%	Low Adopter	97.1	2.9	0	100.0
		Moderate Adopter	0	100.0	0	100.0
		High Adopter	2.2	4.3	93.5	100.0

Accuracy – 96.7% of Original – Validated Grouped Cases Correctly Classified

Table 3 and indicates that three dominant groups have been formed are significantly differentiated by all the five online shopping purchase intention factors. The Discriminant Function 1 shows that WilksLambda = 0.087; Chi-square = 587.302, df = 10, and Eigen Value is 3.481, Canonical Correlation of 0.881 with P-Value of 0.000 proves that significant at 5% level of Significance. The Discriminant Function 2 with WilksLambda value of 0.392, Chi-square value of 225.856, df of 4, Eigen Value of 1.553 and Canonical Correlation value of 0.780 is statistically significant at 5% level of significance. Further, Table 3 shows that 246 respondents are significantly grouped in three clusters namely Low Adopter Group, Moderate Adopter Group and High Adopter Group. The first cluster of Low Adoption Group formed has 68 respondents followed by cluster two of Moderate Adopter Group formed

has 86 respondents and final cluster High Adopter Group has formed with 92 respondents. In addition, discriminant analysis result proves that 96.7 % of such cluster classification is correct. Further, One Way Analysis of Variance results supports that age has significant mean difference with respect to all the five online shopping purchase intention factors such as, accessibility, convenience, consideration, website design and comfort factors. The youngster has higher online purchase intention perception as compared as aged online shoppers in the present study.

## **V. IMPLICATIONS AND CONCLUSION**

The present study was aimed to add knowledge to existing body of knowledge with respect to women consumer behaviour on online shopping purchase intention in Chennai city of Tamil Nadu. The present study proves that factors such as, accessibility, convenience, consideration, website design and comfort are major key factors of online purchase intention of women consumers in the study area. The age is the significant differentiator for the perception and young age consumers have higher perception as compared to aged consumers. So, online e-retailers are suggested to focus on attraction of aged people exclusive by having convenience and good, clear and effective website design to make online shopping a easy and good experience for them. The online shoppers are classified into three distinctive clusters in this group and higher adoption consumers are already have higher perception for online shopping whereas; low adoption and moderate adoption consumers should be given more attention to convert them into higher adoption consumers in online shopping and e-commerce business. The e-retailers are suggested to adopt social media marketing strategies and e-word of mouth strategies to increase the customer base for their products and brands in India.

## **VI. LIMITATIONS AND FURTHER RESEARCH DIRECTIONS**

This study was limited to sample size of only 246 women online shoppers residing in Chennai city of Tamil Nadu. Hence, the findings of this study may not be generalised to overall population of study. The present study was adopted non-probability convenience sampling technique to collect primary responses with structured questionnaire. So, limitation associated with non-probability convenience sampling is also applicable for the present study. This study was a perception study, perception studies are may not provide long lasting solutions to over a period of time due to changes in the socio-economic conditions and demographical changes among the respondents in the study area. Further, this study can be further, extended to male online shopping consumers in near further. The comparative study between male and female will yield more valuable insights to devise appropriate promotional strategies. The exclusive study on age group such as, baby boomers, millennials and generation Z consumers to explore age differences in the shopping behaviour towards online shopping in Indian context.

## **REFERENCES**

1. Alharthey, B. (2020). The Role of Online Trust in Forming Online Shopping Intentions. *International Journal of Online Marketing (IJOM)*, 10(1), 32-57. doi: 10.4018/IJOM.2020010103
2. Anderson, R. E., & Swaminathan, S. (2011). Customer Satisfaction and Loyalty in E-Markets: A PLS Path Modeling Approach. *Journal of Marketing Theory and Practice*, 19(2), 221–234. doi:10.2753/mtp1069-6679190207
3. AnuragPandey., & JiteshParmar. (2019). Consumer's Online Shopping Behavior with Reference to The Flipkart. *Proceedings of 10th International Conference on Digital Strategies for Organizational Success. SSRN Electronic Journal*. doi: 10.2139/ssrn.3323837
4. Armilawati, N. L. P. D., Kusuma, I. G. A. T., & Agung, A. P. (2020). The Effect of Online Shopping Experience on Risk Perception and Trust for Building Online Repurchase Intention. *International Journal of Contemporary Research and Review*, 11(05), 21787-21797. doi:10.15520/ijcrr.v11i05.805
5. Azami, Sadraddin. (2019). Factors Affecting Customers' Purchasing Behavior in Online Shopping. *SSRN Electronic Journal*. doi: 10.2139/ssrn.3377148
6. Balaji, P., & Murthy, S.S. (2019). Web 2.0 : An Evaluation of Social Media Networking Sites. *International Journal of Innovative Technology and Exploring Engineering*, 8 (10), pp. 752-759. doi: 10.35940/ijitee.J8892.0881019
7. DibasGaudel. (2019). Consumers' Attitude towards Online Shopping: Factors influencing Nepali Consumers to Shop Online. Gaudel, Dibas, Consumers' Attitude towards Online Shopping: Factors influencing Nepali Consumers to Shop Online. *SSRN Electronic Journal*. doi: 10.2139/ssrn.3450062
8. Fabiha, Enam., Tanjila Rahman, & Mehedi Hasan Tanvir. (2020). Online Shopping Behavior of Bangladeshi People. *European Journal of Business and Management*, 12(6), 41-48. doi:10.7176/ejbm/12-6-05
9. Fenech, T., & O'Cass, A. (2001). Internet users' adoption of Web retailing: user and product dimensions. *Journal of Product & Brand Management*, 10(6), 361–381. doi:10.1108/eum00000000006207
10. Gunasekaran, A., Marri, H. B., McGaughey, R. E., & Nebhwani, M. D. (2002). E-commerce and its impact on operations management. *International Journal of Production Economics*, 75(1-2), 185-197. doi: 10.1016/S0925-5273(01)00191-8
11. Hung, S.-W., Cheng, M.-J., & Chiu, P.-C. (2018). Do Antecedents of Trust and Satisfaction Promote Consumer Loyalty in Physical and Virtual Stores? A Multi-Channel View. *Service Business*, 13(1), 1–23. doi:10.1007/s11628-018-0364-y
12. Joines, J. L., Scherer, C. W., & Scheufele, D. A. (2003). Exploring motivations for consumer Web use and their implications for e-commerce. *Journal of Consumer Marketing*, 20(2), 90–108. doi:10.1108/07363760310464578
13. Liu, X., He, M., Gao, F. and Xie, P. (2008), An empirical study of online shopping customer satisfaction in China: a holistic perspective. *International Journal of Retail & Distribution Management*, 36(11), 919-940. doi: 10.1108/09590550810911683
14. Maryati, M., & Erika, M. (2019). Relationship Between Online Shopping Site Ads with Buying and Selling Interests on Online Shopping Sites. *IOP Conference Series: Materials Science and Engineering*, 662, 032044. doi:10.1088/1757-899x/662/3/032044
15. O'Cass, A., & Fenech, T. (2003). Web retailing adoption: exploring the nature of internet users Web retailing behaviour. *Journal of Retailing and Consumer Services*, 10(2), 81–94. doi:10.1016/s0969-6989(02)00004-8



16. Pregoner, J. D. M., Opalla, I. L., Uy, J. D., & Palacio, M. (2020). Customers' Perception on the Trustworthiness of Electronic Commerce: A Qualitative Study. doi:10.35542/osf.io/msdpg
17. S. Sasikumar and P. Balaji. (2020). Smart Phone, Internet and Social Media Usage of College Students: A Cyber Psychology Study. *International Journal of Advanced Science and Technology*, 29(8s), 941 - 949. Retrieved from <http://sersc.org/journals/index.php/IJAST/article/view/10861>
18. Sakti, I. W., & Hurriyati, R. (2020). Analyzing Purchase Decision Process Online Shopping in Islamic Shari'a Perspective. *International Journal of Psychosocial Rehabilitation*, 24(02), 3396–3400. doi:10.37200/ijpr/v24i2/pr200654
19. Shantharam, B. B., Balaji, P., & Jagadeesan, P. (2019). 'Impact of Customer Commitment In Social Media Marketing On Purchase Decision—An Empirical Examination'. *Journal of Management (JOM)*, 6(2). 320-326. doi: 10.34218/JOM.6.2.2019.036
20. Suresh, M., Balaji, P., & Rameshkumar, P. M. (2020). Dominant Groups and Differences in Smart Phone and Internet Usage: A Discriminant Analysis Approach. *International Journal of Management*, 11(4), 305-315. doi: 10.34218/IJM.11.4.2020.031
21. Tan, X., Yen, D. C., & Fang, X. (2002). Internet integrated customer relationship management a key success factor for companies in the e-commerce arena. *Journal of Computer Information Systems*, 42(3), 77-86. Retrieved from <https://www.tandfonline.com/doi/abs/10.1080/08874417.2002.11647506>
22. Tsai, H.-T., Huang, H.-C., Jaw, Y.-L., & Chen, W.-K. (2006). Why on-line customers remain with a particular e-retailer: An integrative model and empirical evidence. *Psychology and Marketing*, 23(5), 447–464. doi:10.1002/mar.20121
23. Usman, O., & Zillah, I. A. (2019). The Effect of Recommendation, Customer Satisfaction, Online Shopping Experience, Trust and Word-Of-Mouth Affecting Consumer Online Shopping Decision. *SSRN Electronic Journal*. doi:10.2139/ssrn.3511634
24. Vashisht, A., & Misra, V. (2019). Consumer behaviour and online shopping: the study of online shopping adoption (with reference to Lucknow city). *International Journal of Public Sector Performance Management*, 5(3/4), 321. doi:10.1504/ijpspm.2019.10022484