

CLASSIFICATION OF ONLINE SHOPPERS: A BEHAVIOURAL SEGMENTATION APPROACH

Varshney Bharti*¹

Mehta, B.K²**

Abstract

Growth of online shopping across the globe and in India has necessitated research in motivations of consumers as well as in better segmentation so that marketers can target them more effectively. This paper is an attempt in the direction and uses behavioral segmentation (product basket based segmentation) to identify segments of online shoppers. K means clustering was used to arrive at segments. We could identify two such groups and thereafter established the demographic profile of these two segments for better and easy segments.

Key Words: Online shoppers, Online shopping , Segmentation, Product Basket, Clustering,

¹ * Faculty, Commerce and Business Management, Jamshedpur Women's College, Jamshedpur

² ** Faculty, Department of Commerce, Jamshedpur Cooperative College, Jamshedpur

1. Introduction

Online shopping or Internet retailing is the process of buying and selling products and services, and information over computer networks (Turban, Lee, King & Chung, 2000). Online shopping behavior has seen significant increase in last decade or so and is an extension of increased internet usage behavior over time. The B2C e-commerce market in India has exhibited rapid growth in last few years and has attracted large investments, this market is likely to reach \$60Bn by 2017 comprising nearly 2.5% of total retail in India (Report by Deloitte India, 2014).

Keeping this growth in mind efforts have been made to study the drivers and motivation of online shopping. Work is also recommended to classify the online shoppers into categories so that marketers can target them accordingly and can develop targeted marketing strategy for better efficiency. Some of the efforts have been made to classify people based on motivations and information seeking patterns. Kau, Tang and Ghose(2003) classified people into 5 groups on information seeking patterns and motivations for online shopping. They classified people as: the simplifiers, the surfers, the connectors, the bargain shoppers, the routine followers and the sportsters. Similarly Rohm&Swaminathan (2004) classified online shoppers into four groups based on motivations as the convenience seekers, the variety seekers, the balanced buyers and the store oriented shoppers. Gehrt, Rajan, Shainesh, Czerwinski and O'Brien (2012) classified online shoppers in India on shopping orientation. They identified three segments as Value singularity segment, quality at any price segment and reputation and recreation segment.

Thus lot of knowledge seems to be available with regard to segmentation of online shoppers but there seems to two gaps with regard to the same. Most of this segmentation has been done on the basis of motivations and none on purchase behavior. This could have been a problem as actual shopping data is unavailable from the online companies along with the demographic profile of the consumers. Also there seem to be no agreement with regard to the segmentation. Thus the objective of this paper is to identify consumer segments based on product basket which consumers like to buy online.

Type of product has been identified as another important variable having impact on online shopping behavior otherwise. Most studies on buying behavior focus on one product like books (Gefen et al, 2003; Lin, 2007), clothing (Kim et al., 2003; Yoh et al. ,2003; Kim and Kim, 2004; Ha and Stoel, 2009; Hansen and Moller Jensen, 2009; Tong, 2010), groceries (Hansen et al., 2004), financial services (Mckechnie et al., 2006, Suh and Han, 2003) and car insurance (Broekhuizen and Huizingh, 2009). It has been established that the kind of product have an impact on online shopping. Some products are shopped more than other products. In general products where touch and feel is not so important are purchased more than others. It has also been found that products in which price matters are purchased more and also goods where deals matter like groceries, life-style goods etc. (Thomas and Woodward,1998; Shim and Gehrt, 1996). Levin et al (2003) found that consumer preferences for online and offline services differ as for some products consumers wants that shopping experience. Rishi (2008) in their paper defined the experience as key factor to online shopping. Zhou, Dai and Zhang (2007) identified online shopping experience is one of the factor to shop online. Thus in all online shopping behaviour has been studied with respect to different kind of products. Some of the products are preferred to be shopped online as compared to others. Based upon this product basket next question lies is whether we can segment consumers based on this product basket.

This paper is an attempt in the direction whereby we intent to segment the online consumers based on product basket or else on online shopping patterns of various products and intention to purchase. This article further explains the methodology used for the study and findings, discussion and implications there on.

2. Methodology

Keeping previous research from literature in mind to conduct this study we identified a list of products which are often purchased online in B2C domain. This comprise books, apparels, electronics, footwear and accessories, groceries and baby products. This list of goods was further tested by talking to few online shoppers whereby open ended question was put forward to them asking them list of goods they prefer shopping online or have shopped online in past. The results were as intended and the desired list was used for large scale survey.

In this research keeping the nature of research in mind which is exploratory we used a mix of judgmental, convenience and snow-balling sampling method. This method helped us to get people if some sections of the society were not represented. Around 600 questionnaires were distributed to internet users who do online shopping both manually and online mediums. Out of 580 responses received around 549 questionnaires were workable. Since the drop rate was less than 2% it is an acceptable limit for response bias (Malhotra, 2004). Unit of analysis for this study is individual, as study is restricted to individual online shopping behavior. Respondents are asked to tell about their family and friends' behavior of online.

The respondents are chosen from the population keeping in mind the online shoppers i.e. who does online shopping. The respondents are from different age groups, income class, gender, background to represent the whole population. In this study, the respondents were chosen from different management colleges and schools, office working, housewives, big businessmen, etc. Respondents were asked to give their preference for shopping various goods on a scale of 1-5. The demographic profile of respondents was also collected to establish the profile of different segments in terms of demographics.

3. Findings and Analysis

Classification of Online shoppers was done by using K Means clustering method (Malhotra & Dash, 2013). To classify people into groups preferences towards shopping of various goods was taken as the input variable. We wanted to see how people differ in their product basket with regard to online shopping. To identify the number of possible clusters Dendogram was draw using Hierarchical clustering and we could see two possible clusters, there after K means clustering was used and we could get two clusters of online shoppers with following division (Table 1.1):

Table 1.1: Cluster Distribution of people with regard to Online shopping

S. No.	No of Clusters	No of people in each cluster
1	1	309
2	2	240

The cluster distance between the two clusters was 3.03 which on a scale of 5 looks quite distant apart. We also conducted ANOVA to arrive at F statistics and to find out if the results are significant or not. The results were found to be quite significant with p value of 0.000 (Table 1.2). In all it can be said that there are two types of clusters of online shoppers.

Table 1.2: ANOVA Table with F Statistics

Product	Mean Square	F statistics	Sig
Apparels	106.718	68.666	0.00
Electronics	122.889	94.550	0.00
Books	263.279	192.696	0.00
Footwear & accessories	226.035	183.008	0.00
Groceries	344.412	272.535	0.00
Bay & Kids products	154.733	110.742	0.00

To identify the differences with regard to products purchased by them we found out that cluster 1 customers are infrequent online shoppers as compared to cluster 2. This difference is more profound with regard to groceries, books and baby and kids products. Cluster two people even purchase books and groceries online. On the contrary cluster one people are less infrequent online shoppers and very few of them purchase books, groceries and baby and kids products online.

To define these clusters further we saved cluster scores and tried to differentiate them in terms of age, gender, education, and internet usage habit and internet experience. Among all these variables we found that clusters differ in terms of gender, age, internet usage behaviour and education but not with regard to internet experience. We found out that there are more women in cluster 2, there are more number of 25-34 age group people in cluster 2, there are high frequency internet users in cluster 2 and there are more qualified people in cluster 2.

To summarize the results obtained we can define the two online shopping groups as given in Table 1.3:

Table 1.3: Profile of Clusters of Online Shoppers

Variable		Frequent Online shoppers group	Infrequent online shoppers group
Product Type	Apparels	Frequently	Infrequently/sometimes
	Electronics	Frequently	Infrequently/sometimes
	Footwear & accessories	Frequently	Infrequently/rarely
	Books	Sometimes/frequently	Never
	Groceries	Sometimes/frequently	Never
	Baby and kids products	Sometimes/frequently	Rarely/never
Demographics	Gender	Mostly female	Mostly male
	Age	25-34	Either too young or mid age
	Education	High	Low
	Internet usage behaviour	High and regular	Low to medium

4. Discussion

Results show that online shoppers in India people can be divided into two groups. One group can be explained as *infrequent online shoppers* and other group can be explained as *frequent online shoppers*. The frequent online shoppers group even buys groceries, books and baby and kids products online along with apparels and electronics. Out of the infrequent online shoppers group though many buy apparels and electronics but the frequency of purchase is very less and most of them do not buy groceries, books and baby and kids products.

It seems people in India move from buying apparels and electronics to other products like groceries etc. This is so as in apparels people are looking for variety and choice and also

discounts thus ready to experiment and in electronics people are looking for availability, choice, variety and better deal and since in both the categories product is standard there is no need of experiencing the product before buying it. Further with the easy return policies provided by online companies along with cash on delivery services reduces the threshold level to buy. Thereby it is easy for people buy these two products. Once people have experienced these two purchases online they are ready to further shop online and take higher risks. To them online shopping has become more or less like a habit. Hence they easily move on to goods like footwear and accessories where experience matters and in goods like groceries where in spite of easy availability through vast retail network (more than 15 million retail outlets) online shopping is done.

For people who are new to online shopping they are content with shopping apparels and electronics. Their risk taking ability is lower and hence they only go for products which are fairly standard in nature and in goods where availability is a problem and experience does not matter. Thus we can clearly divide online shoppers into new buyers and old buyers or frequent buyers and infrequent buyers or people with wide basket of good and people with small basket of goods. This behavioral understanding about the consumers can be used in designing offers, suggesting choices and also in providing differential services of delivery etc.

Further through mapping the demographics of the clusters of online shoppers we found out that frequent group of online shoppers had more women, more people in 25-34 age group, more qualified people and people with high internet usage habit. Young people have been found to do more online shopping (Joines et al., 2003; Lester, Loyd and Moore, 2003) and so is the case with people who are more educated (Forsythe and Shi, 2003; Kau et al., 2003; Swinyard and smith, 2003). This may be because they have higher risk taking ability and are more confident in reading and understanding the information given on the online marketer website. One factor which is coming out unique is this group of frequent online shoppers has more women. Gender has not been established in the literature and mostly men have been found doing more online shopping than women and was also established in first part of our report as well. However, in this case the results are opposite, but corroborates with results we obtained from qualitative research there also women shop more and they mostly shop for clothes (apparels), accessories,

groceries etc. clothes may be because they want more choice and accessories as Indian dresses demand more of them, to explain it further we need purchase data which was not available but can be collected in future. However, some of the evidence for the same is available from qualitative data. Also may be more men shop online but frequency among women once used to online shopping is more.

Thus we can clearly say that Indian has two kind of online shoppers a frequent shopper who has a bigger product basket. This group is young belongs to age bracket of 25-34, is more qualified and displays a higher internet usage behavior. On the other hand, we have a wider infrequent or a new online shopper group which is either very young or belongs to middle age, is less qualified and displays a lower internet usage behaviour.

5. Conclusion & Implications

This study helps us identify two categories of online shoppers in India: a frequent online shopper who is young and more educated and has a wider product basket and an another group infrequent shopper who is middle aged and less educated and has a smaller basket of goods shopped online. This segmentation of online consumers on product basket and frequency is not available in literature so far and needs to be explored further by duplicating studies in other settings.

Further this division of customers into two categories as frequent and infrequent shoppers with different baskets signifies need to create different marketing programs for different set of customers. For frequent online shoppers with bigger basket marketers need a program towards creating higher loyalty, repeat purchase and utmost customer satisfaction so as to create referrals. For in-frequent shopper's marketers need to identify ways to increase their number of visit to the website by creating attractive deals and offers and also find ways to increase their basket size by creating better associations and recommendations.

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