

# An Exploratory study on the Demographic Variables & Purchase Quotient of Online Shoppers of Mumbai City

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**ABSTRACT** - Online markets are flourishing exponentially. With major players holding on, in spite of negative bottom lines reflects the future potential this visual market holds. Studies which are being carried out to gain an insight into the booming e markets are not too many and still trying to grapple with a clear mandate on what determines online purchase behavior. Of course, the field itself is becoming complex as many variables are getting added as time passes by. A detailed study depicting demographic variables. Demographic variables and their association/relationship with Mumbai based online shoppers Purchase Quotient has been done in this paper so that an understanding on the underlying factors develops as a premise for future studies. Which age group is more active in online shopping?, Are married people more comfortable with online buying compared to singles?, Does income level acts as a factor in buying online? Does male are more active than female in buying online? Does occupation plays an important role to influence consumer behavior towards online shopping? What are the security issues which inhibit people in purchasing online and whether these are being addressed properly by the agencies involved?. Does education influence purchase quotient of Mumbai based online shoppers? These and many other questions are raised by the authors while carrying out this study?

Previous studies are a pointer to some extent, nevertheless, as the markets are still evolving there seems to be a need for such studies before a settled picture gathers shape. As data is collected for Mumbai alone, rural purchase behavior has not been studied. A focused strategy of developing e- markets can be designed by interested players for the dynamic future. It should help in online marketers to convert their negative bottom lines into positive ones.

**KEYWORDS** – Online purchase, Actual E-Shoppers(Purchase Quotient), Demographic Variables

## I. INTRODUCTION

“Online buying behavior refers to the behavior displayed by online consumers during pre purchase, purchase and post purchase process.”

Information technology and the Internet have had a dramatic effect on business operations. Companies are making large investments in e-commerce applications but are hard pressed to evaluate the success of their e-commerce systems. The DeLone & McLean Information Systems Success Model can be adapted to the measurement challenges of the new e-commerce world. The six dimensions of the updated model are a parsimonious framework for organizing the e-commerce success metrics identified in the literature. Two case examples demonstrate how the model can be used to guide the identification and specification of e-commerce success metrics. William H. DeLone & Ephraim R. McLean pages 31-47 International Journal of Electronic Commerce Volume 9, Issue 1, 2004

The main objective of this research is to develop a clear understanding about the different research points related to studies of E-Marketing published between 2003 and 2013 and explore and analyze the different methodologies implemented by the researchers in the field of E-Marketing Consequently.

- **The Theory of Planned Behavior (TPB)** started as the Theory of Reasoned Action in 1980 to predict an individual's intention to engage in a behavior at a specific time and place. The TPB states that behavioral achievement depends on both motivation (intention) and ability (behavioral control). It distinguishes between three types of beliefs - behavioral, normative, and control.

- **Diffusion of Innovation (DOI) Theory**, developed by E.M. Rogers in 1962, is one of the oldest social science theories. It originated in communication to explain how, over time, an idea or product gains momentum and diffuses (or spreads) through a specific population or social system.

The end result of this diffusion is that people, as part of a social system, adopt a new idea, behavior, or product.

Adoption means that a person does something differently than what they had previously (i.e., purchase or use a new product, acquire and perform a new behavior, etc.).

- **Social Cognitive Theory (SCT)** started as the Social Learning Theory (SLT) in the 1960s by Albert Bandura. It developed into the SCT in 1986 and posits that learning occurs in a social context with a dynamic and reciprocal interaction of the person, environment, and behavior.

The unique feature of SCT is the emphasis on social influence and its emphasis on external and internal social reinforcement. SCT considers the unique way in which individuals acquire and maintain behavior, while also considering the social environment in which individuals perform the behavior. The theory takes into account a person's past experiences, which factor into whether behavioral action will occur.

- **The Theory of Reasoned Action** was developed by Martin Fishbein and Icek Ajzen (1975, 1980), derived from previous research that started out as the theory of attitude, which led to the study of attitude and behavior.

The theory was "born largely out of frustration with traditional attitude-behavior research, much of which found weak correlations between attitude measures and performance of volitional behaviors" (Hale, Householder & Greene, 2002, p. 259).

Derived from the social psychology setting, the theory of reasoned action (TRA) was proposed by Ajzen and Fishbein (1975 & 1980). The components of TRA are three general constructs: behavioral intention (*BI*), attitude (*A*), and subjective norm (*SN*). TRA suggests that a person's behavioral intention depends on the person's attitude about the behavior and subjective norms ( $BI = A + SN$ ).

- **The Technology Acceptance Model (TAM)** is an information systems theory that models how users come to accept and use a technology. The model suggests that when users are presented with a new technology, a number of factors influence their decision about how and when they will use it, notably.

It was developed by Fred Davis and Richard Bagozzi (Davis 1989, Bagozzi, Davis & Warshaw 1992). TAM replaces many of TRA's attitude measures with the two technology acceptance measures— *ease of use*, and *usefulness*. TRA and TAM, both of which have strong behavioral elements, assume that when someone forms an intention to act, that they will be free to act without limitation. In the real world there will be many constraints, such as limited freedom to act (Bagozzi, Davis & Warshaw 1992).

## II. RESEARCH GAP

As mentioned above earlier research on E-consumer behavioral theory "TPA, DOI, SCT, TRA, TAM" suggested a prominent role of e-shoppers "Intention to buy online" but there is no clear confab on "Actual E-Shoppers/ Purchase Quotient". So current research is trying to fill the gap by proposing the PQ Matrix & demarcation with respect to various online shoppers categories. ie. Loyal E-shoppers, Moderate E-Shoppers, Frequent E-Shoppers & Strangers.

## III. LITERATURE REVIEW

### Buyer's Demographic Variables

Demographic variables include age, education, gender and income. [19&20&21] found that age is not a significant determinant of online shopping behavior. Only Teo (2001) found that age significantly affects online shopping behavior [22]. Education is one of the important demographic variables determining consumer buying online (Case et al., 2001, Kwak et al., 2002). These studies argue that college students are the most active group on the Internet. They argue that college students with considerable computer knowledge are more likely to make online purchases than those with lesser knowledge.

A number of studies (e.g., Goldsmith and Goldsmith 2002, Kwak et al., 2002, and Teo, 2001) found a significant impact of gender on online shopping behavior. Online shopping has long been dominated by higher income consumers. Recent statistics, however, show that purchases by lower and middle-income online users are on the upswing. Case et al., (2001) and Kwak et al., (2002) found that income is an important factor affecting online shopping behavior.

**Thomas W. Dillon, Harry L. Reif** "Factors Influencing Consumers' E-Commerce Commodity Purchases" Information Technology, Learning, and Performance Journal, Vol. 22, No. 2, Fall 2004. This research seeks to develop a better understanding of the factors motivating young people to select e-commerce vendors for commodity purchases by exploring attitudes, demographic characteristics and purchase decision perceptions (i.e., the product, shopping experience, customer service, and consumer risk). **Findings indicate that young adults with a history of e-commerce purchasing experience have a more positive attitude towards online buying than do young adults without e-commerce purchasing experience.** In a related finding, a history of e-commerce purchasing experience serves as a good predictor of future e-commerce commodity purchases. **Additionally, consumer risk and shopping experience perceptions were found to influence experienced e-commerce shoppers' commodity purchase decisions more than customer service or consumer risk [29].**

**KanokwanAtcharyachanvanich, Hitoshi Okada, Hitoshi Okada, (2007),** How Consumer Lifestyles Affect Purchasing Behavior: Evidence from Internet Shopping in Japan: Journal of Entrepreneurship Research June 2007, Vol.2, No.2, p. 63-78. This paper examines how consumer lifestyles (e.g., price-oriented, innovative, and net-oriented lifestyles) affect purchasing behavior on the Internet. The research model is a combination of a marketing factor, perceived risk, and a technological innovation factor, compatibility. The results of an online questionnaire filled out by 1,111 Japanese online consumers pointed out that a consumer whose lifestyle is more price-oriented will perceive fewer risks to Internet shopping. **Consumers who are more net-oriented will perceive more compatibility in purchasing through Internet shopping than less net-oriented ones. The findings revealed a contradiction to findings of prior studies purporting that having a high-innovative or high-net-oriented lifestyle does not make Japanese consumers purchase through the Internet [30].**

**- Gender**

[Alreck and Settle 2002; Brown et al. 2003; Donthu and Garcia 1999; Korgaonkar and Wolin 1999; Levy 1999; Li et al. 1999; ; Rodgers and Harris 2003; Slyke et al. 2002; Stafford et al. 2004] Male consumers make more online purchases and spend more money online than females; they are equally or more likely to shop online in the future, and are equally or more favorable of online shopping. Women have a higher-level of web apprehensiveness and are more skeptical of e-business than men.

**- Age**

[Bellman et al. 1999; Bhatnagar and Ghose 2004b; Bhatnagar et al. 2000; Donthu and Garcia 1999; Joines et al. 2003; Korgaonkar and Wolin 1999; Li et al. 1999; Rohm and Swaminathan 2004; Stafford et al. 2004] There are mixed findings on the relationship between age and online shopping intention.

**- Income**

[Bagchi and Mahmood 2004; Donthu and Garcia 1999; Korgaonkar and Wolin 1999; Li et al.1999; Susskind 2004] Income is positively related to online shopping tendency.

**- Education**

[Bagchi and Mahmood 2004; Bellman et al. 1999; Donthu and Garcia 1999; Li et al. 1999;Liao and Cheung 2001; Susskind 2004] Education level produces mixed effects ranging from no effect to a positive effect on online shopping.

**IV. Constructs in the present Study**

In order to reflect actual e-buying behavior, the researchers have developed a construct and have named it as “Purchase Quotient”

**Purchase Quotient**

**“Purchase Quotient=Purchase Value \* Purchase Frequency.”**

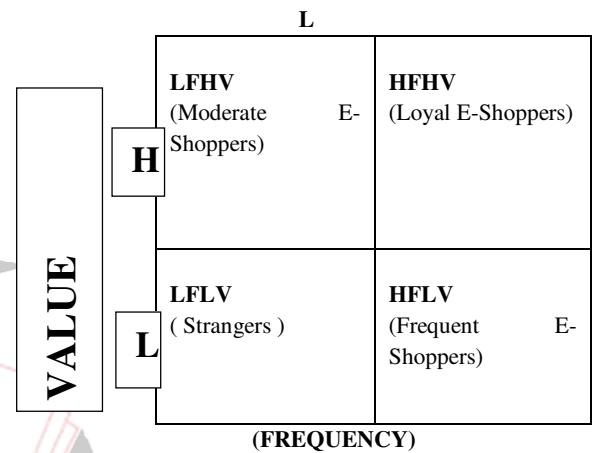
*"Purchase Quotient is a parameter which is compiled by combining a shoppers frequency of purchase & value of purchase."*

**-Purchase Value: Low Value (LV)=purchase <Rs. 6000**

**High Value (HV)>Rs. 6000**

**- Purchase Frequency :Low Frequency (LF) =<8**

**High Frequency (HF)>8**



**V. OBJECTIVE**

To explore the association of different demographic variables on purchase quotient of Mumbai based online shoppers

**VI. Hypothesis**

H1= There is a significant relationship between Age and purchase quotient Of Mumbai based online shoppers

H2= Male online shoppers purchase quotient is higher than female Mumbai Based online shoppers.

H3= Occupation has significant association on purchase quotient of online Shoppers.

H4= Highly qualified shoppers purchase quotient is higher than less Qualified online shoppers.

H5= High Income groups shoppers purchase quotient is more, compared to low income online shoppers.

H6= Marital status has an association on purchase quotient of Mumbai based online shoppers.

## VII. RESEARCH METHODOLOGY

- **Research Design:** The research design is a sample survey of Buyers

- **Scope of the study:**

The study involves different types of online shoppers based on frequency in business to consumer (B2C) market segment. The respondents involved in this research study were selected from Mumbai with the condition of having experience in online shopping.

- **Variables in this study are as follows:**

**Independent variables**

**Demographic variables**

- Age
- Gender
- Income
- Occupation
- Education
- Marital status

**Dependent variable is :**

- Online shoppers Purchase Quotient

- **Population and sample size**

The population of this study includes online shoppers in Mumbai who have purchased different products from online shopping sites. The sample method adopted was **Convenience Quota Sampling** . It involves a sample units of 2039 experienced online shoppers in Mumbai from (ie. Students, Servicemen, Businessmen, Professionals & Corporate Executives ).

- **Data collection**

The current study understands the effect of Demographic Variables on Mumbai Based online shoppers . Primary data was collected with a self administered questionnaire from online shoppers in Mumbai. Secondary data was collected from articles in e-journals related to online shopping.

- **Survey instrument**

A structured questionnaire was developed with five point rating scale with ranging from strongly agree to strongly disagree on demographic variables such as website Age, Gender, Income, Education, Occupation, customer service, Trust, security & reliability towards online shopping. It was developed with discussion of experts ,online shoppers and literature review.

- **Statistical tools**

- Data analysis was done using statistical package for social science (SPSS ) version 20 and

- data gathered through **structured questionnaire** in order to achieve study's objectives
- **Chi -Square Testis** used to find out association/relationship between Independent & Variables (ie. Age, Gender, Income, Occupation, Education & Marital status) of online shoppers with Dependent Variable (Purchase Quotient). It is also used when both IV & DV are categorical in nature.
- **Eta- Test** is used to find out the strength of association/relationship between IV & DV, whether it is positively strong , positively weak , negatively strong or negatively weak.
- The Eta value from **+1 to 0.6**, which signifies a very strong relationship in a 2 by 2 table. with categorical data and larger tables a value near to 1 is not possible, any value near 0.6 denotes a very strong relationship. If observed value is near "zero" then will say strength of association between IV & DV is weak, if observed value is near"0.6" then will say association is very strong.

For a deeper insight into the direction of association ( If there is one), The Means plot of **ANOVA** is used. ANOVA is also used to find out association or relationship between IV & DV , when one variable is categorical and the other one is scale. for inference in this study to analyze association between Age & PQ , we used ANOVA because Age is a scale variable where as PQ is a categorical variable.

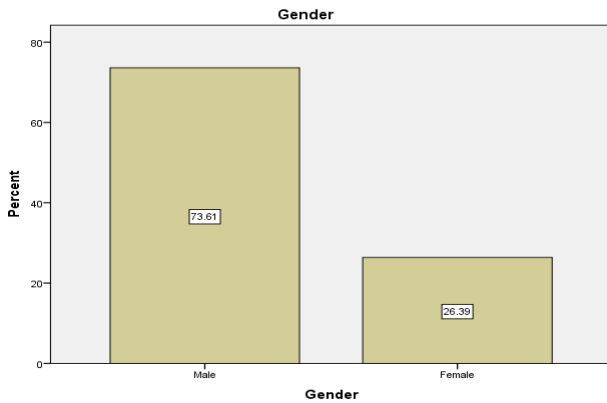
## VIII. Data Analysis and Results

### Characteristics of the Respondents

Understanding the back-ground of the respondents, it is important for interpretation of the finding meaningfully. For the proposed study total count of samples are 2039, ie. from Mumbai region.

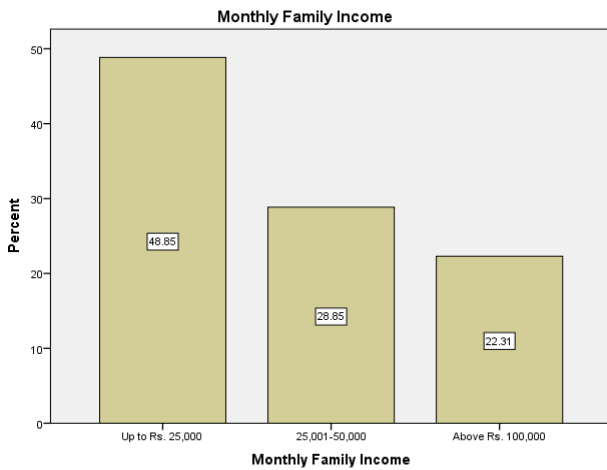
**Frequency Graphs for Demographics of respondents**

**Graph-1-Gender**



The percentage of male and female respondent is not in equal proportion, in collected samples male respondents are 73% & female are just 26%. (Graph -1).

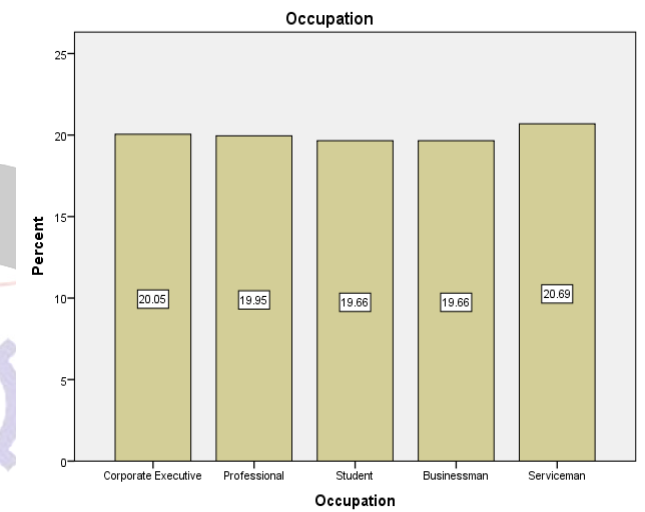
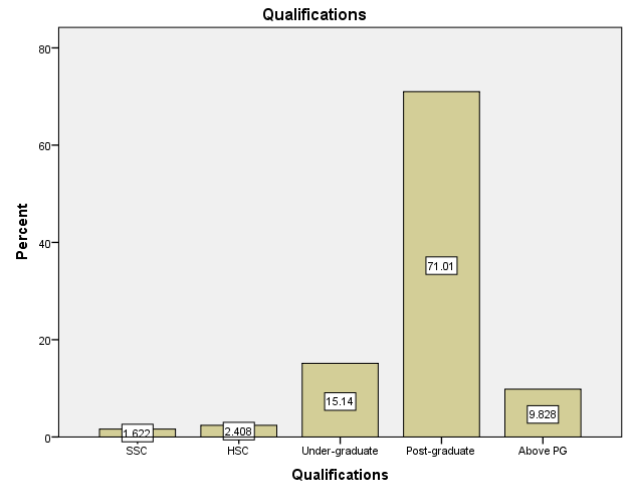
**Graph-2 - Qualification**



In terms of qualification post-graduate group is more dominating, i.e. 71% (Graph-2). Whereas under graduates 15%. It depicts that majority of respondents from all the group categories are Post Graduate.

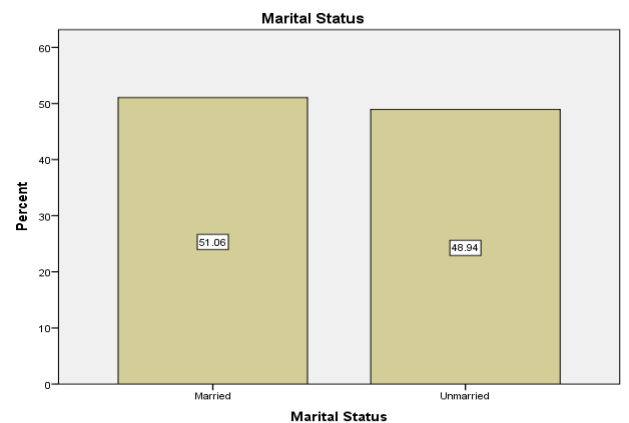
**Graph-3 – Monthly family Income**

As far as family income is concerned the lower income group (Rs. Upto 25 thousand) is the largest followed by middle income group (Rs. 25- 50, thousand) and higher income group (Rs. 1, lacs and above). Respondents families having income above Rs. 1 lacs are only 22%. (Graph-3)



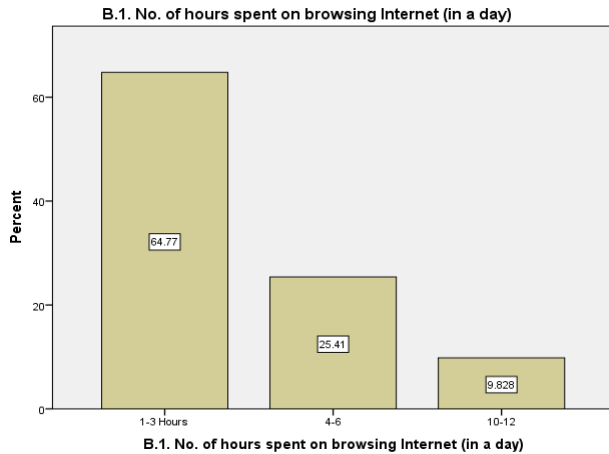
Occupation wise all the respondents are in same proportion i.e. 20% & 19% (Graph -4)

**Graph-5 - Marital status**



Under marital status married 51% and unmarried 48% i.e. nearly equally proportionate (Graph-5)

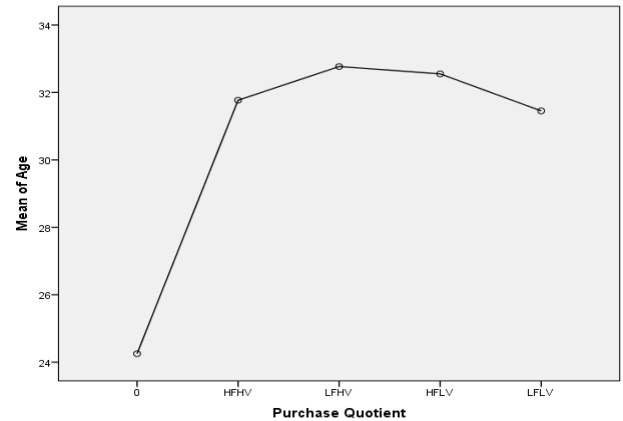
**Graph-6 - Number of hours spent on browsing internet (in a day)**



Minimum number of hours ie. 1-3 hrs. spent on browsing internet in a day by majority of the respondents ie. 64% and 25% respondents spent 1-4 hrs. where as only 9% respondents spent more than 10-12 hrs. on browsing internet.(table-6)

The above table (table-1) depicts the relationship between mean age and purchase quotient. As Age increases purchase quotient decrease (from HFHV to HFLV). It dips a bit in the end reflecting that Low Frequency and Low Value shoppers are also youngsters. This is depicted in the means plot below.

**Means Plots for Age with PQ**



**Table-2 : ANOVA for Age**

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	845.226	4	211.307	2.443	.045
Within Groups	175589.887	2030	86.497		
Total	176435.114	2034			

### IX. ANALYSIS OF HYPOTHESIS

**H1= There is a significant relationship between Age and purchase quotient Of Mumbai based online shoppers**

**H0= There is no significant relationship between Age and purchase quotient Of Mumbai based online shoppers**

**Age and Reading of Labels**

**Table-1: Descriptive Statistics for Age with Purchase Quotient**

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Min	Max
					Lower Bound	Upper Bound		
0	4	24.25	3.862	1.931	18.10	30.40	20	28
HFHV	204	31.77	8.128	.569	30.65	32.89	18	59
LFHV	364	32.77	10.077	.528	31.73	33.81	17	63
HFLV	225	32.55	9.204	.614	31.34	33.76	17	59
LFLV	1238	31.45	9.270	.263	30.94	31.97	17	64
Total	2035	31.83	9.314	.206	31.42	32.23	17	64

Age is a significant variable in Demographic variable, that helps to know that youth shoppers are ready to adopt innovation in all the fields .

ANOVA used to measure association between Age of online shoppers & Purchase Quotient. ANOVA value ( $P=0.045 > 0.005$ ) is significant at 0.005% LOS. Ref. (Table-2) It specifies that Age of online shoppers does affect Purchase Quotient, there is an association between Age & PQ, but the association is not as strong as in Qualification & Income with PQ.

So we reject Null hypothesis & accept Research hypothesis. ie There is a significant relationship between Age and purchase quotient of Mumbai based online shoppers.

**H2= Male online shoppers purchase quotient is higher than Female Mumbai Based online shoppers purchase quotient.**

**H0= There is no significance difference between Male online shoppers purchase quotient and Female Mumbai Based online shoppers purchase quotient.**

**Gender and Reading of Labels**

Gender is an important variable in Demographic variable, used Chi-Square to measure association between Gender of online shoppers & Purchase Quotient. Purchase Quotient is comprises of online shoppers Purchase Frequency & Purchase Value.

**Table- 3: Gender wise Case Processing Summary of Respondents**

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Purchase Quotient * V8gender	2035	99.8%	4	0.2%	2039	100.0%

**Table-4 : Cross tabulation for Purchase Quotient with Gender**

		V8gender		Total
		Male	Female	
Purchase Quotient	HFHV	9.1%	12.5%	10.0%
	LFHV	17.6%	18.8%	17.9%
	HFLV	11.3%	10.2%	11.1%
	LFLV	61.9%	58.5%	61.0%
Total		100.0%	100.0%	100.0%

Cross tabulation of Purchase Quotient with Gender for both male & female shows less variation from HFHV to LFLV in the observed values of Mumbai based online shoppers, ie values of HFHV is 10%, HFLV is 11%, LFHV is 17.9% & LFLV is 61% ref.(Table-4).

**Table-5 : Significance of information read by Gender with Purchase Quotient**

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	5.942 <sup>a</sup>	3	.114
Likelihood Ratio	5.754	3	.124
Linear-by-Linear Association	4.509	1	.034
N of Valid Cases	2035		

Where as Pearson Chi-Square value (P=0.114 > 0.005) is not significant at 0.005% LOS. Ref. (Table- 5) It indicates that Gender of online shoppers does not affect Purchase Quotient, there is no association between Gender & PQ.

**Table-6 : Strength of association read by Eta- Directional Measures**

			Value
Nominal by Interval	Purchase Quotient	Eta	.047
	Vgender	Dependent	.054

However if we look at Eta value is 0.047 Ref.(Table-6), which shows Gender & PQ has very weak association/relationship. So we accept Null hypothesis & reject Research hypothesis. ie There is no significance difference between Male online shoppers purchase quotient and Female Mumbai Based online shoppers purchase

**H3= Occupation has a significant association with online shoppers purchase quotient**

**H0=Occupation has no significant association with online shoppers purchase quotient.**

**Occupation and Reading of Labels**

Occupation is also related with the age and education, which is having a great impact on PQ of Mumbai based online shoppers. Where we have respondents from different occupations such as Corporate executives, students, businessmen, service men and professionals, but occupation does have an impact on Purchase Quotient of online shoppers but does not show strong association between PQ & Occupation.

**Table- 7: Occupation wise Case Processing Summary of Respondents**

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Purchase Quotient * V7occu	2035	99.8%	4	0.2%	2039	100.0%

**Table- 8 : Cross tabulation for Occupation with Purchase Quotient.**

		V7occu				
		Corporate Executive	Professionals	Students	Business men	Service men
Purchase Quotient	HFH	13.3%	6.6%	13.0%	10.2%	7.1%
	LFHV	18.4%	17.2%	20.5%	15.5%	17.8%
	HFLV	13.5%	15.2%	6.8%	12.5%	7.4%
	LFLV	54.8%	60.9%	59.8%	61.8%	67.7%
Total		100.0%	100.0%	100.0%	100.0%	100.0%

Cross tabulation of Purchase Quotient with Occupation shows high variation in the observed values of Mumbai based online shoppers, ie values of HFHV is 7.1%, HFLV is 7.4% is merely same but LFHV is 17.8% & LFLV is 68% are showing huge variation in online shoppers purchase value and purchase quotient. Ref.(Table-8).

**Table-9 : Significance of information read by Occupation with PQ**

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	46.100 <sup>a</sup>	12	.000
Likelihood Ratio	47.347	12	.000
Linear-by-Linear Association	8.046	1	.005
N of Valid Cases	2035		

Pearson Chi-Square value ( $P=0.000 < 0.005$ ) is significant at 0.005% LOS. Ref. (Table-9) It depicts that Occupation of online shoppers has an impact on Purchase Quotient, there is an association between Occupation & PQ.

**Table-10 : Strength of association read by Eta- Directional Measures**

			Value
Nominal by	Eta	Purchase Quotient Dependent	.093
Interval		V7occu Dependent	.091

However if we look at Eta value is 0.093 Ref.( Table-10), which indicates Occupation & PQ has very weak but positive association/relationship. So we reject Null hypothesis & accept Research hypothesis, ie Occupation has a significant association with online shoppers purchase quotient

**H4= Highly qualified consumers purchase quotient is higher than less Qualified online shoppers.**

**H0= There is no significant difference between highly qualified consumers purchase quotient & less qualified online shoppers purchase quotient.**

**Education/Qualification and Reading of Labels**

Awareness regarding social media, online shopping websites, available offers depends on the ability of the shoppers to comprehend the content given on social media and knowledge about various traits of online shopping. Education should there for a significant variable to influence online shoppers PQ.

**Table-11 : Education wise case processing summary**

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Purchase Quotient * V6eduqual	2035	99.8%	4	0.2%	2039	100.0%

**Table -12 : Cross tabulation for Education with PQ.**

		V6eduqual			Total
		SSC	HSC	PG	
PQ	Count	114	9	81	204
	Expected Count	128.2	13.8	62.0	204.0
	% within V6eduqual	8.9%	6.5%	13.1%	10.0%
	Count	193	17	154	364
	Expected Count	228.8	24.7	110.5	364.0
	% within V6eduqual	15.1%	12.3%	24.9%	17.9%
	Count	144	19	62	225
	Expected Count	141.4	15.3	68.3	225.0
	% within V6eduqual	11.3%	13.8%	10.0%	11.1%
	Count	828	93	321	1242
	Expected Count	780.6	84.2	377.2	1242.0
	% within V6eduqual	64.7%	67.4%	51.9%	61.0%
Count	1279	138	618	2035	
Expected Count	1279.0	138.0	618.0	2035.0	
% within V6eduqual	100.0%	100.0%	100.0%	100.0%	

Cross tabulation of Purchase Quotient with Qualification shows very high variation in PQ frequency, the observed values of Mumbai based qualified online shoppers, ie values of HFHV is 10% & LFLV is 61%, where as LFHV is 17.9% & HFLV is 11.1% ref.(Table- 12).



**Table-13 : Significance of information read by Education with PQ.**

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	47.904 <sup>a</sup>	6	.000
Likelihood Ratio	46.730	6	.000
Linear-by-Linear Association	35.126	1	.000
N of Valid Cases	2035		

Pearson Chi-Square value ( $P=0.000 < 0.005$ ) is significant at 0.005% LOS.Ref. (Table-13 ) It signifies that Education of online shoppers has major impact on Purchase Quotient of e-shoppers & there is a strong association between Education & PQ

**Table-14: Strength of association read by Eta- Directional Measures**

	Value
Nominal by Interval	
Purchase Quotient Dependent	.140
V6eduqual Dependent	.143

Where as Eta value is 0.140 Ref.( Table-14),which indicates Education & PQ has very strong association/relationship. So we reject Null hypothesis & accept Research hypothesis.ie Highly qualified consumers purchase quotient is higher than less Qualified online shoppers.

**H5= High Income groups shoppers purchase quotient is more, compare to low income groups online shoppers.**

**H0= There is no difference between purchase quotient of high income groups And low income groups online shoppers.**

**Income and Reading of Labels**

Income is another variable that should be related to the importance given to the Purchase Quotient of Mumbai based online shoppers. In general study found that as income increases the association with PQ also increases.

**Table-15 : Income wise case processing summary**

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Purchase Quotient * V9income	2035	99.8%	4	0.2%	2039	100.0%

**Table-17 : Significance of information read by Income with PQ**

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	42.501 <sup>a</sup>	6	.000
Likelihood Ratio	41.722	6	.000
Linear-by-Linear Association	24.762	1	.000
N of Valid Cases	2035		

Pearson Chi-Square value ( $P=0.000 < 0.005$ ) is highly significant at 0.005% LOS.Ref. (Table-17 ). Which shows that Income influence PQ of online shoppers , there is very strong association between Income & PQ

**Table-16 : Cross tabulation for Income with PQ**

		V9income		
		upto 25,000	25,001 to 50,000	Above 1 lakh
PQ	Count	91	51	62
	HFHV Expected Count	99.6	58.8	45.5
	% within V9income	9.2%	8.7%	13.7%
	Count	172	78	114
	LFHV Expected Count	177.8	105.0	81.2
	% within V9income	17.3%	13.3%	25.1%
	Count	100	73	52
	HFLV Expected Count	109.9	64.9	50.2
	% within V9income	10.1%	12.4%	11.5%
Total	Count	631	385	226
	LFLV Expected Count	606.7	358.3	277.1
	% within V9income	63.5%	65.6%	49.8%
	Count	994	587	454
Total	Expected Count	994.0	587.0	454.0
	% within V9income	100.0%	100.0%	100.0%

Table-20 : Cross tabulation for Marital status with PQ

Cross tabulation of Purchase Quotient with Income shows high variation in the observed values of Mumbai based online shoppers , ie values of HFHV is 13.7 % , LFHV is 25.1 % , HFLV is 11.5 % & LFLV is 49.8 ref.(Table-16 ).

Table- 18 : Strength of association read by Eta- Directional Measures

			Value
Nominal by Interval	Eta	Purchase Quotient	.132
		V9income Dependent	.114

If we look at Eta value is **0.132**Ref.( Table- 18),which indicates Income & PQ has very strong association/relationship. So we reject Null hypothesis & accept research hypothesis.ie High Income groups shoppers purchase quotient is more, compare to low income groups online shoppers.

**H6= Marital status has strong association on purchase quotient Of Mumbai based online shoppers.**

**H0= Marital status has no association on purchase quotient Of Mumbai based online shoppers.**

**Marital status and Reading of Labels**

It is believed that marital status of shoppers affects PQ of online shoppers. Since number of persons in a family may leads to high PQ or wise versa.

Table-19 : Marital status wise case processing summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Purchase Quotient * V5marstat	2035	99.8%	4	0.2%	2039	100.0%

		V5marstat			Total
		Married	Unmarried	4	
HFHV	Count	96	108	0	204
	Expected Count	103.9	99.5	.6	204.0
	% within V5marstat	9.3%	10.9%	0.0%	10.0%
LFHV	Count	183	180	1	364
	Expected Count	185.3	177.6	1.1	364.0
	% within V5marstat	17.7%	18.1%	16.7%	17.9%
HFLV	Count	107	118	0	225
	Expected Count	114.5	109.8	.7	225.0
	% within V5marstat	10.3%	11.9%	0.0%	11.1%
LFLV	Count	650	587	5	1242
	Expected Count	632.3	606.0	3.7	1242.0
	% within V5marstat	62.7%	59.1%	83.3%	61.0%
Total	Count	1036	993	6	2035
	Expected Count	1036.0	993.0	6.0	2035.0
	% within V5marstat	100.0%	100.0%	100.0%	100.0%

But Cross tabulation of Purchase Quotient with Marital status shows less variation in the observed values of Mumbai based online shoppers PQ , ie values of HFHV is 10%,HFLV is 11%, LFHV is 17.9% &LFLV is 61% ref.(Table- 20).

Table-21 : Significance of information read by Marital status with PQ

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	5.337 <sup>a</sup>	6	.501
Likelihood Ratio	6.546	6	.365
Linear-by-Linear Association	1.501	1	.220
N of Valid Cases	2035		

Where as Pearson Chi-Square value (P=0.501 > 0.005) is not significant at 0.005% LOS. Ref. (Table- 21) It depicts that Marital status of online shoppers does not effect Purchase Quotient, there is no association between Marital status & PQ.

**Table-22 : Strength of association read by Eta- Directional Measures**

			Value
Nominal by Interval	Eta	Purchase Quotient	.041
		Dependent	
		V5marstat Dependent	.033

However if we look at Eta value is 0.041 Ref.( Table- 22 ), which signifies Marital Status & PQ has very irrelevant association/relationship. So we accept Null hypothesis & reject Research hypothesis. ie Marital status has no association with purchase quotient of Mumbai based online shoppers.

### X. CONCLUSION

**Table-23. Analysis Summary**

Variables	Association/Relationship (Yes or No)	Eta-Directional measures for the strength of Associ.	Direction of strength (weak or strong)
Age	0.045 > 0.005 -Yes		Weak Association
Gender	0.114 > 0.005 -No	Eta-value 0.047	Weak Association
Occupation	0.000 < 0.005 -Yes	0.093	weak but +ve. Association
Education	0.000 < 0.005 -Yes	0.140	Strong +ve. Association
Income	0.000 < 0.005 -Yes	0.132	Strong +ve. Association
Marital Status	0.501 > 0.005 -No	0.041	Weak Association

Ref. above (table- 23) , study says that from the given demographic variables Age, Gender, Occupation & Marital status shows very weak association with Purchase Quotient of Mumbai based online shoppers, where as only Education & Income has highly strong association with PQ. That clearly indicates as well as suggested that high income and high education leads to “HFHV” High Purchase & High Frequency for online shopping. Only these two variables can make online shoppers a “Loyal Shoppers” for business like E-Commerce. So E-marketers can plan their business strategies accordingly to target and retain high income group people and highly qualified people. This study gives much better understanding to know average age group online shoppers ie. Youth are also

equally important for E-marketers. So should also have business strategies that can help to retain Youth online shoppers and to convert them into Loyal Shoppers.

This study will also add to knowledge by serving as secondary information to studies revolving around the same topic.

### XI. GRATITUDE

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