

## Consumer Behavior towards Online Shopping using Meta Analysis

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### Abstract

*This study is related to consumer buying behavior specially in online shopping. In this case, e commerce has played an important role for shopping at home. But this study explores the summated result of previous research findings. The objective of this research paper is to analyze the consumers' status towards online shopping. This research paper is to generalize research findings emanating from the research on status of online shopping by consumers conducted during 2014 to 2018. To achieve the objective of this study, the previous 8 research studies is taken as a sample, meta analyses is used as a statistical tool for analyzing the data and to get results consumers status towards online shopping. And the result indicates that the consumers are highly influenced with online shopping.*

**Keywords:** Consumers behavior, Meta analyses, Online shopping, Internet, Chi square

### Introduction

Nowadays, computers, mobile phones have completely changed the people life. Through internet one can easily handles day to day transactions and do online shopping. Monsuwe et al. (2004) online shopping refers to the shopping behavior of a person through a website or online store used for purchasing purpose. It is a tool for e commerce which helps consumers to purchase products or services through internet by using different websites amazon, flipcart, walmart, snapdeal, paytm, jabong, ebay, shopclues, makemy trip, homeshop 18, bookmyshow, zomato, firstcry, swigy, likewise. People can easily log on and buy everything like apparel, furniture, food, jewellery, clothes, books, electronic goods, move tickets, air tickets from home. The fast internet technology provides online stores and information to consumers for buy goods or services through different websites. The new trend of online shopping has adopted by consumers too rapidly and to do shopping while sitting in office or home. People use electronic commerce not only for shopping products but also to compare prices, product features and after sale services from different companies' stores. Rahman et al. (2018) most of the consumers are liked home delivery facility and purchase products through cash on delivery payment method. This method provides ease of security and satisfaction to the consumer. Debit card, credit card or other services as paypal is also a valid method to complete a payment transaction through online shopping.

### Review of Literature

Jain et al. (2014) studied the impact of different factors which affect the consumers through online shopping as risk, enjoyment, usefulness and ease of use. This study results revealed that the perceived risk negatively affected to consumer attitude but usefulness, enjoyment and ease of use shown no impact on consumer behavior towards online shopping. Jindal and Chander (2015) described about meta analyses in the study towards investors rationality for IPOs. This study was taken twenty research studies based on investors' rationality for IPOs and found result from meta analyses fixed and random effect models.

Bashir et al. (2015) examined the behavior of consumers through five factors as trust, privacy, convenience, time and product variety towards online shopping among youth of Punjab and Pakistan. This study found that the consumers preferred to stay at home and shop through online website stores. Kanupriya et al. (2016) analyzed the consumers' behavior, awareness about online shopping and constructional framework for fine turning electronic business strategies. And found positive feedback from consumers. Kothari and Maindargi (2016) studied five factors as cognition, sensed usefulness, security, enjoyment and comfort of use which affect the consumer buying behavior towards online purchasing.

Ahmed et al. (2017) explored the effect of different variables as purchase orientation, perceived benefits, brand and quality orientation by online shopping on consumers of Pakistan. And found positive effect on consumers buying behavior towards electronic shopping. Suraj and Sutapa (2018) studies various external factors influence on online shopping. And found that online retailer services and self efficacy strongly influenced by perceived ease of use and perceived convenience but perceived usefulness has no significant effect found on online shopping.

### **Objective and Research Methodology**

This paper aims on to understand the consumers' status towards online shopping. It was hypothesized by keeping this objective into consideration as:

H<sub>0</sub>: Consumers do online shopping.

This hypothesis verifies by calculating the chi square value with respect to the level of significance. In this study, the questionnaire based 8 studies have been selected through google browser under the period of 2014 to 2018 which are considered as qualitative researches and suitable for the meta analysis. This research paper results are depended upon the previous research studies sample data. This sample data has collected for this study and are tested with the help of Meta analyses.

Calculation of Q (chi square)

Jindal (2014) The Q symbol is developed for a chi-square statistic in which k denoted as the total number of studies and df for degree of freedom. And the null hypothesis is consumers do online shopping. To analyze this hypothesis, meta analysis is used in which chi square value is calculated against chi square table values. If the calculated value of chi square is more than the table value then null hypothesis is rejected otherwise accepts the same.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	Theoretical Study; Meta analysis of 8 cross sectional studies.														
2	Author Name and Year	Events	Sample Size	Mean(es)	Standard Error	Variance	weights	w*es	w*(es <sup>2</sup> )	w <sup>2</sup>		W <sub>v</sub>	W <sub>v</sub> *es	W <sub>v</sub> *(es <sup>2</sup> )	W <sub>v</sub> <sup>2</sup>
3	Jain et al., 2014	100	160	0.625	0.0625	0.00390625	256	160	100	65536		23.22992831	14.5187052	9.07419075	539.629569
4	Bashir et al., 2015	215	250	0.86	0.058651513	0.00344	290.6976744	250	215	84505.1379		23.48428553	20.1964856	17.3689776	551.511667
5	Kanupriya et al., 2016	70	100	0.7	0.083666003	0.007	142.8571429	100	70	20408.1633		21.67238613	15.1706703	10.6194692	469.692321
6	Kothari and Maindargi, 2016	100	230	0.434782609	0.043478261	0.001890359	529	230	100	279841		24.37120758	10.5961772	4.60703357	593.955759
7	Ahmed et al., 2017	300	360	0.833333333	0.048112522	0.002314815	432	360	300	186624		24.12168093	20.1014008	16.7511673	581.855491
8	Suraj and Satupa, 2018	90	120	0.75	0.079056942	0.00625	160	120	90	25600		22.03047587	16.5228569	12.3921427	485.341867
9	Santhi and Gopal, 2018	250	250	1	0.063245553	0.004	250	250	250	62500		23.17944797	23.179448	23.179448	537.286808
10	Rahman et al., 2018	160	179	0.893854749	0.070665423	0.004993602	200.25625	179	160	40102.5657		22.65761712	20.2526187	18.1028994	513.367613
11															
12	k	8				Sums:	2260.811067	1649	1285	765116.867		184.7470294	140.538363	112.095328	4272.64109
13	df	7													
14															
15	Q (chi square)	82.2454			Q <sub>v</sub>	5.186809187						v	0.03914167		
16	I <sup>2</sup>	91.4889			I <sub>v</sub> <sup>2</sup>	-34.95773119									
17															
18	es(fixed)	0.72938			es(random)	0.760707022									
19	SEes(fixed)	0.02103			SEes(random)	0.073571781									
20	CI(fixed)	0.68816	0.77060577		CI(random)	0.616506332	0.904907712								

Figure 1: Combined 8 studies meta analysis calculation.  
 Values of chi square before applying random effect model

The formula of  $Q = \sum(w * es^2) - \frac{[\sum(w*es)]^2}{\sum w}$

Q= 82.245 and rejects the null hypothesis due to calculated value of Q is more than the table value (14.067) at 5 percent significance level.

Calculation of I<sup>2</sup>

This  $I^2$  is used to quantify the study's heterogeneity between the independent studies in the meta analysis.

The formula of  $I^2 = (Q-df) Q*100$

$I^2 = 91.48$  and high heterogeneity.

So,  $Q$  and  $I^2$  values are showing rejection of hypothesis and high heterogeneity in this study. Now it's the time to proceed with the random effect model to quantify the results by meta analysis.

Values through using random effect model

The formula of  $Q_v = \sum(wv * es^2) - \frac{[\sum(wv*es)]^2}{\sum wv}$

$Q_v = 5.186$  and accepts the null hypothesis. This value is less than the table value of chi square distribution table.

Calculation of  $I^2$

The formula of  $I^2 = (Q_v-df) Q_v*100$

$I^2 = -34.96$  and very low heterogeneity.

In this case after applying meta analysis random effect model, values of chi square and heterogeneity found reliable and accepts the null hypothesis. Therefore, there is no significant difference found among studies over the study period. This means consumers are doing online shopping in these days.

### Results with meta analyses

This paper has focused on the consumer behavior towards shopping by use of online websites whether the consumers do shopping optimistically or pessimistically. And the results found that the consumers are influenced by doing online shopping. The value of  $Q$  which was less than the table value of chi square decided the acceptance of hypothesis. This happened due to the revolution of new technology and faster usage of internet by people. Majority of consumers wanted to do online shopping because got price discount, time saving, reliability, variety of options and avoid hassels of shopping in stores.

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