

# **The B2C e-commerce index of Thailand- A paradox of online penetration.**

Varughese Kizhakkacharuvil John  
Associate Professor, Graduate School of eLearning  
Assumption University  
Bangkok – 10540, Thailand.

[vjohn@au.edu](mailto:vjohn@au.edu) / [varughese.kjohn@gmail.com](mailto:varughese.kjohn@gmail.com)

## **Abstract**

The present study is an investigation into the penetration of business-to-consumer e-commerce in Thailand. The study has been conducted by a field survey among the consumers by questionnaire method and collected samples from regular online and regular offline shoppers in the country. The total sample size was 1535 units collected from the north, northeastern, central and southern regions of the country. The findings of the study revealed that penetration of online shopping is 15 percent with an estimated range of 13 to 17 percent for the entire population, and it is higher in central and northeastern regions but lower in north and southern regions. The important observation in the study is that there is very low penetration of online shopping in Thailand due to the lack of trust in online traders and non-confidence in online payments.

**Keywords:** *B2C e-commerce, index, offline shoppers, penetration, Thailand*

## **Introduction**

It was highlighted in the executive summary of ‘E-Commerce Development Report’ of the United Nations (2002) that e-Commerce would help developing countries to improve trade efficiencies and enables them for the integration to the global economy along with providing jobs and creating wealth (United Nations Conference on Trade and Development [UNCTAD], 2002). Thailand is the third major economy among the ASEAN community and has been classified under ‘efficiency driven economies’ based on its score (4.72/7) in Global Competitiveness Index 2017-18 which placed the country in 32nd position among 137 world economies (World Economic Forum, 2018). The Networked Readiness Index of Thailand is 4.201 (7 best) in 2016 and ranked in 62nd position among 139 countries. (World Economic Forum, 2016).

## **Literature Review**

The Internet Technology has brought information revolution in the society and is regarded as the third wave of revolution after agricultural and industrial revolution, and e-commerce is the cutting edge for business today (Gangeshwar, 2013).

A study conducted in Greece reveals that consumers have no trust in e-payments, regardless if it is debit or credit card, also most of the consumers have preferred e-commerce for shopping items like music, books, CDs, videos, and travel tickets and not to buy groceries, medical services or drugs (Xanthidis & Nicholas, 2007).

The attitude of consumers for online shopping was investigated in detail through a study of purchasing fashion products in Myanmar. The findings proved that product performance and financial risks are most significant factors for effecting the consumers' attitude towards online shopping and the convenience, privacy risk and hedonic motive are least influenced (Aung, 2016). Another study in Malaysia has proved that online shopping behavior of consumers would adversely affect due to product, financial, and non-delivery risks, whereas convenience and trusted site of the online seller were found to have positive effect on consumers' attitude (Ariff, Sylvester, Zakuan, Ismail & Ali, 2014).

In the study conducted in China it was proved that consumers of different ages and genders with different purchasing power have different concerns in their online process, and so the e-commerce companies must pay more attention to improve the consumer experience of online purchasing (Xu, Zou & Wang, 2006).

There are findings in various studies which state that the influencing factors for online shopping are website design/features, convenience, time saving, security, less price, discount, feedback from previous customers, and quality of product (Sultan, & Nasir, 2011; Bauboniené & Gintaré, 2015). It was found in a European study that the price differences between European countries for identical products are large both in the traditional channel and online. Further, the study says that consumers benefited proportionately more by the introduction of online sales, and this is entirely due to the appearance of an additional distribution channel and not due to increased competition (Duch-Brown, Grzybowski, Romahn, & Verboven, 2017).

There are several factors which influence the consumers for online shopping. It varies from country to country depends on culture, technological penetration, purchasing power, time constraint, and so on. A study in Saudi Arabia has identified that the main influencing factors

for online shopping are price, confidence in the online merchant, security in online transactions, convenience of online shopping, and time saving (Khalil, 2014). In a Chinese study it has been recognized that the attitude to adopt online shopping by consumers in China is greatly influenced by the marketing mix or the 4Ps (product, price, place, and promotion) and the reputation of the online vendor (Jun & Jaafar, 2011).

Laosethakul and Boulton (2007) says that social behavior and national culture were the major influences for the success of e-commerce in Thailand. Another study conducted by Grey and Sanzogni (2014) says that e-commerce initiatives in Thailand have been put in place with good progression since the early 1980's and more significantly in the 1990's. In another study it was found that among the Thai consumers the nine influencing factors for receptivity of online shopping are price, refund, convenience, auction websites, security, brand, search engines, promotion, and online shopping malls in the order of strongest to weakest predictors (Akbar & James, 2015).

A study on the socio economic impact of e-commerce says that although e-commerce adoption has the potential to reduce disparities between states, asymmetric access to its benefits by different sections of society can have far reaching social and economic implications (Sharma & Gupta, 2003). The percentage of internet shoppers based on total population for the year 2013 has been plotted in Figure 1 where Thailand is at the lowest end of the graph with a share of less than 2 percent whereas it is more than 70 percent in U.K. (UNCTAD, 2015).

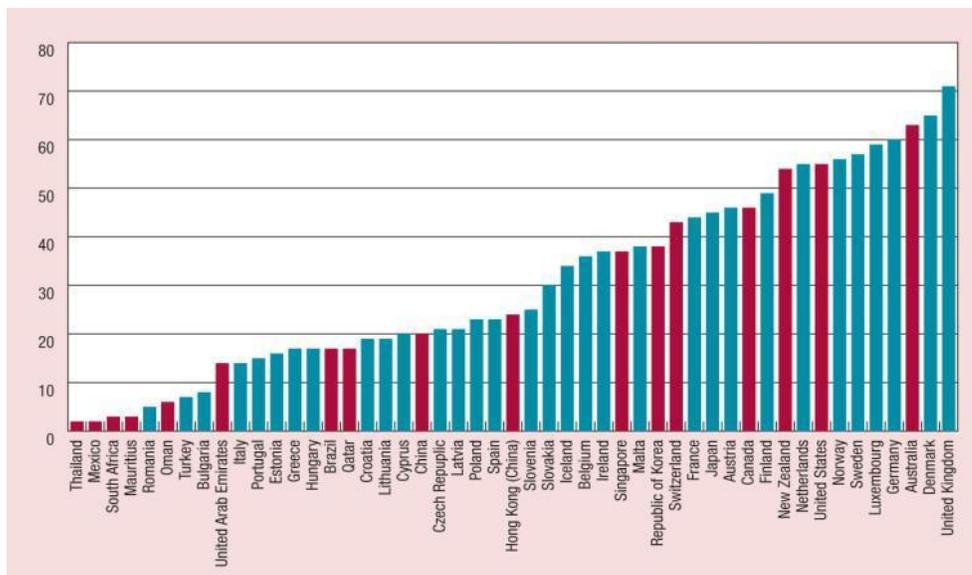
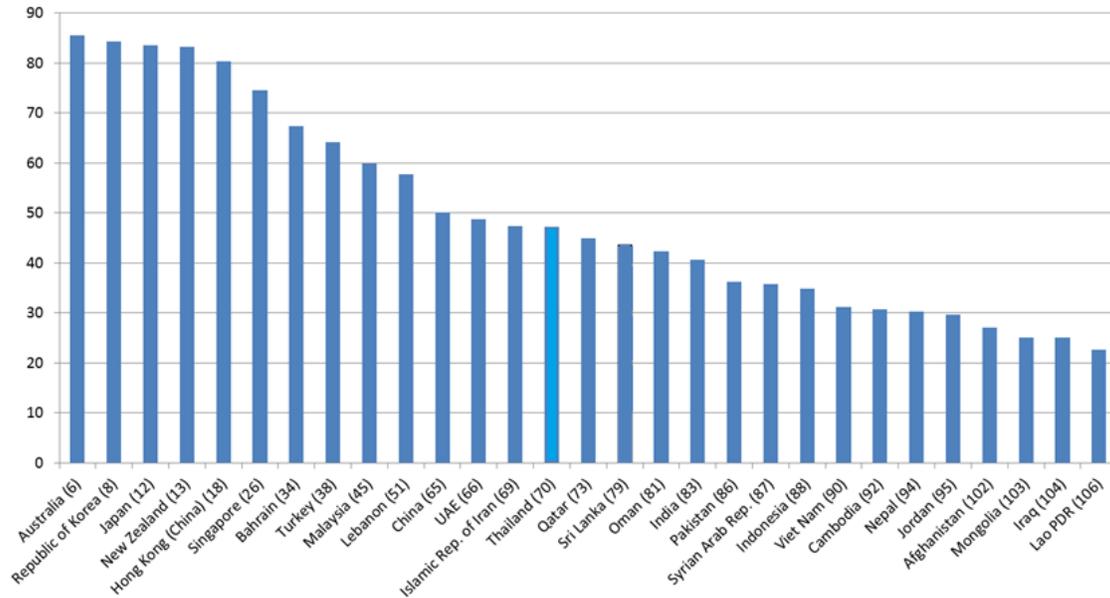


Figure 1- Share of individuals buying online 2013 (Source: UNCTAD IER 2015)



**Figure 2- B2C e-Commerce Index 2015 – Asia-Pacific (Source: UNCTAD IER 2015)**

The B2C e-Commerce Index computed by UNCTAD is graphically represented in Figure 2 where the indicators included in the index are - 1. Percentage of individuals using internet in the country; 2. Credit Card (% aged 15years plus); 3. Secure internet servers (per 1 million people); and 4. Percentage of the population having mail delivered at home. The B2C e-Commerce Index 2015 covers total 130 countries. Thailand’s B2C e-Commerce Index value is 47.2 and it is ranked in the 70<sup>th</sup> place among 130 countries in 2015.

### Methods

The study is based on primary sample survey among consumers (both online and offline shoppers) in Thailand by dividing the entire geographical area into 4 regions, viz., North, Northeast, Central, and South (Refer Annexure 1). Since the size of population is unknown a comfortable sample size of 400 had been targeted to collect from each region. The questionnaire (Thai language) method was used which was pre-tested at a pilot survey of 100 sample units. The reliability of the items for each variable was satisfactory with a score of 0.7 or more. A screening question was used to group the consumers either as regular online shopper or regular offline buyer, and hence, two separate set of questionnaires were used to collect data. The respondents were selected by convenience sampling method and trained data collectors were appointed in each region for the offline survey. The collected raw data had been subjected to the process of data cleaning and ultimately 1535 sample units (regular online shoppers  $n = 787$  and regular offline buyers  $n = 748$ ) were included in the final data set with a region-wise frequency

distribution of North- 381; Northeast- 391; Central- 395; South- 368. The data collection was from January to March 2018. The shopping of commodities were classified under 5 heads- Books & Magazines, Cosmetics, Mobile, Laptop, and Other items. The data were analyzed by descriptive and inferential statistical methods with the help of statistical packages such as IBM SPSS, and MS excel.

### Data Analysis

The consumers' survey was conducted with the objective of estimating the penetration of online shopping and attitude of consumers towards online shopping. The penetration of online shopping in Thailand is a critical factor as region-wise to understand the overall growth of e-Commerce in the country. There is cultural and economic diversity among the different regions of Thailand, though the country is not so vast and highly populated. So to get a representative sample of the population, the geographical difference had been taken into account. Therefore, the study has postulated the hypothesis that-

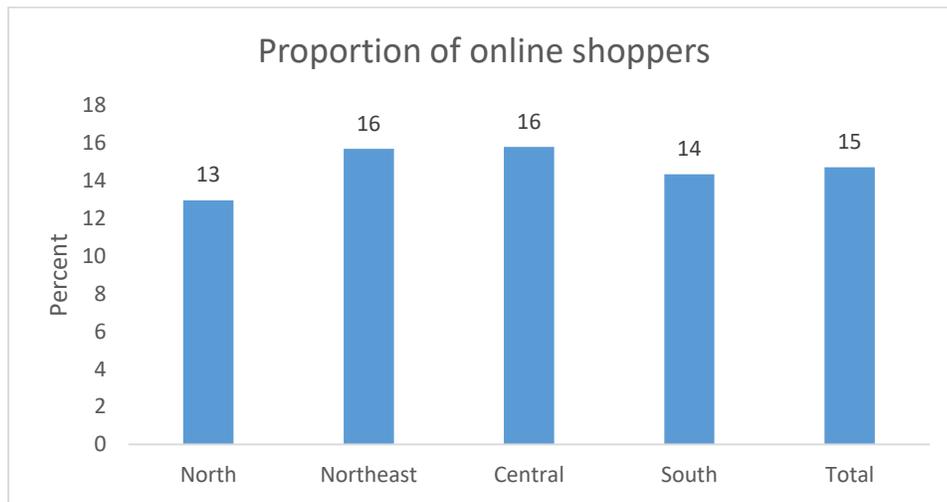
**Ha:** *There is significant difference among the four regions of Thailand with respect to the frequency of online shopping.*

**Table 1: Frequency distribution of Online shopping – Commodity vs. Region**

<b>Commodities</b>	<b>North</b>	<b>Northeast</b>	<b>Central</b>	<b>South</b>
Books & Magazine	19	35	41	34
Cosmetics	88	116	99	96
Mobile	13	42	51	32
Laptop	14	18	33	10
Other Items	113	96	88	92

Source: Sample survey

The frequency of online shopping (Table 1) by the consumers in the sample is to be considered as the penetration of online shopping in the country. The penetration of B2C e-commerce is computed on the basis of the number of responses in favor of each commodity regarding the consumers' preference to go for online rather than offline. The proportion of online shoppers (Figure 3) in each region is calculated as the ratio of the sum of the frequencies in Table 1 by the number of sample units in each region which are 381, 391, 395, and 368 in North, Northeast, Central, and South respectively aggregated to a total of 1535. The average of each region is considered as the general penetration of e-Commerce in the respective region (North- 13%, Northeast & Central – 16% each, and South- 15%) and that for the entire sample size is 15 percent with a population range estimate of 13 to 17 percent at 95 percent confidence interval.



**Figure 3- Average proportion of online shoppers buying frequency**

### **Hypothesis Testing– Penetration of Online shopping**

**H0:** *There is no significant difference among the four regions of Thailand with respect to the frequency of online shopping.*

The chi-square value for the equality of proportion of the 5 commodities (Books & Magazines, Cosmetics, Mobile, Laptop, and Other items) in the 4 regions as given in Table 1 is computed (refer Annexures 2 - 4) where,  $\chi^2 (12, N=1130) = 45.5$ , whereas, the corresponding table value is  $\chi^2 = 21.026, p < .05$ . Since the calculated value is higher than the table value the null hypothesis (H0) is not accepted at 5 percent level of significance. Hence, there is significant difference among the four regions of Thailand with respect to frequency of online shopping and it is comparatively high in Central and Northeast regions and low in Northern and Southern regions of Thailand.

### **Results and Discussion**

The study revealed that penetration of online shoppers is 15 percent for the sample which ranges to the population from 13 to 17 percent at confidence interval of 95 percent. According to the B2C e-commerce Index-2015 estimated by the United Nations Conference on Trade and Development (UNCTAD, 2015), Thailand's index value is 47.2 and ranked in the 70<sup>th</sup> place among 130 countries. This estimate is showcasing only the infrastructure potential for B2C e-commerce in a country based on internet usage, credit card holders or e-wallet payments, secured internet servers per million population, and postal delivery index. In Thailand the percent of individuals using internet (% of total population) is 39.32 in 2015 and the total population of the

country is estimated as 49 million in the age group of 15-64 years during the same period (World Bank 2015).

It could be estimated from the present study that the average penetration of e-commerce (B2C) among various commodities is 15 percent and it is maximum in the Central and Northeastern regions (16%) and the lowest in the Northern region (13%) and the Southern region has 14 percent. The central and northeastern regions are educationally and economically forward when compared to the other two regions. It could be the reason for a higher penetration of B2C e-commerce in these two regions. Among the commodities majority of the consumers use online shopping for cosmetics, followed by mobile phones, books and magazines, and laptop. Other than these four commodities the consumers mainly buy apparels, shoes and bags in online. The offline buying frequency in the survey of regular offline consumers have proved that 57% of the shoppers are buying these commodities offline and it is highest in the case of cosmetic items. These two different figures show that there is a wide gap exists between online shopping and offline shopping in Thailand.

Forty-one percent of the consumers are using internet for more than 6 hours a day. This is a positive sign for the penetration of online shopping and the most prominent websites for shopping in Thailand is the Facebook, followed by Lazada, and Shopee. This is an indication of the trust towards websites where the Thai online consumers trust more in domestic e-Commerce websites created by the online seller rather than the foreign websites developed by e-Commerce website developers, in other words, 'social commerce' is more popular in Thailand because of the increasing penetration of smart phone and the prevalence of 3G and 4G networks in the country. The study of Vongsraluang and Bhatiasevi (2016) explains that Thai organizational users considered social commerce as an easy and user-friendly platform. Many Thai SME users found that social commerce system can support their business in terms of communicating with customers, reaching new market segments, support marketing activities and sales, and increasing their competitive latency. Thai users are also concerned with reliability, ability, and ethics of the system and 'trust' is an antecedent factor and the most influential factor affecting both use of social commerce and user satisfaction. The policies of Thailand 4.0 have much impact in the penetration of business-to-consumer e-commerce in Thailand.

## Conclusion and Recommendations

It could be summarized from the above discussion that e-commerce (B2C) in Thailand has to go a long road for its take off to the level of a fast developing country or an emerging economy. In all developed countries the share of B2C e-commerce is more than 50 percent of the total retail trade and in some countries it is 70 to 80 percent and in Thailand it is estimated by UNCTAD less than 2 percent of the population (Figure 1). In Thailand the penetration could be estimated around 15 percent according to the present study, so the paradox remains. The technological progress shall be disseminated among the low-income people in order to enjoy the fruits of economic progress by all and thereby the economy could be more strengthened to rescue the country from its middle-income trap.

## Acknowledgement

I am thankful to my University for funding this project and also greatly indebted to all my data collectors and research assistants for their whole-hearted support for the completion of this project on time.

## References

- Akbar, S. & James, P.T.J. (2015). Consumers' attitude towards online shopping: Factors influencing employees of crazy domains to shop online. *Journal of Management and Marketing Research*, 1–11. Retrieved from <http://www.aabri.com/manuscripts/131640.pdf>
- Ariff, M. S. M., Sylvester, M., Zakuan, N., Ismail, K., & Ali, K. M. (2014). Consumer Perceived Risk, Attitude and Online Shopping Behaviour; Empirical Evidence from Malaysia. *IOP Conf. Series-Materials Science and Engineering* 58. doi:10.1088/1757-899X/58/1/012007
- Aung, K. T. (2016). *Factors affecting of e-commerce on consumer's attitude towards purchasing fashion products: a study of Myanmar online consumers* (Unpublished master's thesis). Bangkok University, Thailand. Retrieved from <http://dspace.bu.ac.th/bitstream/123456789/1975/1/Khaingthazin.aung.pdf>

- Baubonienė, Živilė, & Gulevičiūtė, G. (2015). E-commerce factors influencing consumers' online shopping decision. *Socialinės technologijos social technologies*, 5(1). 74–81. Retrieved from <https://www3.mruni.eu/ojs/social-technologies/article/download/.../4067>
- Duch-Brown, N., Grzybowski, L., Romahn, A. & Verboven, F. (2017). The Impact of Online sales on consumer and firms. Evidence from consumer electronics. *International Journal of Industrial Organization*, 52. 30–62. Retrieved from <http://dx.doi.org/10.1016/j.ijindorg.2017.01.009>
- Gangeshwer, D.K. (2013). E-Commerce or Internet Marketing: A Business Review from Indian Context. *International Journal of u- and e- Service, Science and Technology*, 6 (6) 187–194. Retrieved from [http://www.sersc.org/journals/IJUNESST/vol6\\_no6/17.pdf](http://www.sersc.org/journals/IJUNESST/vol6_no6/17.pdf)
- Grey H., & Sanzogni, L. (2014). Technology Leapfrogging in Thailand: Issues for the support of e-commerce Infrastructure. *EJSIDC*, 16 (3). 1–26. Retrieved from [https://research.repository.griffith.edu.au/bitstream/handle/10072/5360/27346\\_1.pdf?sequence=1](https://research.repository.griffith.edu.au/bitstream/handle/10072/5360/27346_1.pdf?sequence=1)
- Jun, G., & Jaafar, N. I. (2011). A study on consumers' attitude towards Online shopping in China. *International Journal of Business and Social Science*, 2(22). 122–132. Retrieved from [http://www.ijbssnet.com/journals/Vol\\_2\\_No\\_22\\_December\\_2011/15.pdf](http://www.ijbssnet.com/journals/Vol_2_No_22_December_2011/15.pdf)
- Khalil, N. (2014). Factors affecting consumer's attitudes on online shopping in Saudi Arabia. *International Journal of Scientific and Research Publications*, 4 (11). 1–8. Retrieved from <http://www.ijsrp.org/research-paper-1114/ijsrp-p3555.pdf>
- Laosethakul, K., & Boulton, W. (2007). Critical success factor for e-commerce in Thailand: Cultural and Infrastructural Influences. *EJISDC*, 30 (2), 1–22. Retrieved from <https://onlinelibrary.wiley.com/doi/pdf/10.1002/j.1681-4835.2007.tb00205.x>
- Sharma, S. K., & Gupta, N. D. J. (2003). Socio-economic influences of e-commerce adoption. *Journal of Global Information Technology Management*, 6 (3). Retrieved from <https://www.tandfonline.com/doi/abs/10.1080/1097198X.2003.10856353>
- Sultan, M.U., & Nasir, M.D. (2011). *Consumers' Attitude towards Online Shopping: Factors influencing Gotland consumers to shop online* (Unpublished master's thesis). Gotland University, Gotland. Retrieved from <https://uu.divaportal.org/smash/get/diva2:420724/FULLTEXT01.pdf>

- The World Bank. (2015). *World Development Indicators*. Retrieved from <http://databank.worldbank.org/data/source/world-development-indicators#>
- United Nations Conference on Trade and Development (UNCTAD). (2002). *E-commerce and Development Report, 2002*, (UNCTAD/SDTE/ECB/2). Retrieved from [http://unctad.org/en/Docs/ecdr2002\\_en.pdf](http://unctad.org/en/Docs/ecdr2002_en.pdf)
- United Nations Conference on Trade and Development (UNCTAD). (2015). *A Global Outlook on Information Economy Statistics Bangkok, Thailand 27 October 2015*, Retrieved from [https://www.eta.or.th/content\\_files/2/files/UNCTAD-Thailand-27Oct2015\\_rev2.pdf](https://www.eta.or.th/content_files/2/files/UNCTAD-Thailand-27Oct2015_rev2.pdf)
- Vongsraluang, N. & Bhatiasevi, V. (2016). The determinants of social commerce system success for SMEs in Thailand. *Information Development 2017*, 33(1), 80–96. Retrieved from <http://journals.sagepub.com/doi/pdf/10.1177/0266666916639632>
- World Economic Forum. (2016). *Global Information Technology Report 2016 – Innovating in the Digital Economy*. Retrieved from <https://www.weforum.org/reports/the-global-information-technology-report-2016>
- World Economic Forum. (2018). *Global Competitiveness Report 2017-2018*. Retrieved from <http://reports.weforum.org/global-competitiveness-index-2017-2018/#topic=data>
- Xanthidis, D., & Nicholas, D. (2007). Consumer preferences and attitudes towards e-Commerce activities: Case study Greece. *Proceedings of the 6<sup>th</sup> WSEAS Intl Conference on e-Activities*, (pp. 134–139). Spain.
- Xu, H., Zou, X., & Wang, H. (2006). Consumers' attitudes of e-commerce in China. *Scholarship and Professional Work – Business*, 83. Retrieved from [http://digitalcommons.butler.edu/cob\\_papers/83](http://digitalcommons.butler.edu/cob_papers/83)



**Annexure 2 – Observed frequency distribution – Region v. Commodities**

<b>Commodities</b>	<b>North</b>	<b>Northeast</b>	<b>Central</b>	<b>South</b>	<b>Total</b>
Books & Magazine	19	35	41	34	<b>129</b>
Cosmetics	88	116	99	96	<b>399</b>
Mobile	13	42	51	32	<b>138</b>
Laptop	14	18	33	10	<b>75</b>
Other Items	113	96	88	92	<b>389</b>
<b>Total</b>	<b>247</b>	<b>307</b>	<b>312</b>	<b>264</b>	<b>1130</b>

**Annexure 3 – Expected frequency distribution – Region v. Commodities**

<b>Commodities</b>	<b>North</b>	<b>Northeast</b>	<b>Central</b>	<b>South</b>	<b>Total</b>
Books & Magazine	28	35	36	30	<b>129</b>
Cosmetics	87	108	110	93	<b>399</b>
Mobile	30	37	38	32	<b>138</b>
Laptop	16	20	21	18	<b>75</b>
Other Items	85	106	107	91	<b>389</b>
<b>Total</b>	<b>247</b>	<b>307</b>	<b>312</b>	<b>264</b>	<b>1130</b>

**Annexure 4 – Computation of Chi-square value**

<b>O-E</b>	<b>O-E</b>	<b>(O-E)^2</b>	<b>(O-E)^2</b>	<b>(O-E)^2/E</b>	<b>(O-E)^2/E</b>
-9.20	5.38	84.59	28.97	3.00	0.81
0.78	-11.17	0.62	124.69	0.01	1.13
-17.16	12.90	294.62	166.34	9.77	4.37
-2.39	12.29	5.73	151.09	0.35	7.30
27.97	-19.41	782.37	376.57	9.20	3.51
-0.05	3.86	0.002	14.91	0.00	0.49
7.60	2.78	57.75	7.74	0.53	0.08
4.51	-0.24	20.32	0.06	0.54	0.00
-2.38	-7.52	5.65	56.58	0.28	3.23
-9.68	1.12	93.78	1.25	0.89	0.01
				24.56	20.94
				<b>Chi-square</b>	<b>45.50</b>