

A statistical analysis of E-Commerce (Amazon) data sets in India

¹ Rincy V Thomas, ² Navitha B, ³ Praveen kumar GD

^{1,2} Assistant Professor, Department of Commerce, BUASC, Gudalur, Nilgiris, Tamil Nadu, India

³ Assistant Professor, Department of Computer science, BUASC, Gudalur, Nilgiris, Tamil Nadu, India

Abstract

E-commerce refers to a wide range of on line business for product and services, through internet. It makes large challenges in the economic, social and cultural aspect. In this paper describe the overview of E-commerce, type role of ecommerce, application and also calculating the sales and revenue details, net profit details, gross profit using the methodology of mean, median, mode, and chi-square.

Keywords: E-commerce, types, mean, median, chi-square

1. Introduction

The first e-commerce site in India was rediff.com. E-commerce in India is still in growing stage, but even the most –pessimistic projections indicate boom. E-commerce based on data processing, including text, sound, image. The business includes various activities such as the electronic exchange of goods and services, instant delivery of digital content, business plans, collaborative design and engineering, electronic stock exchange, government procurement, direct marketing, services after the sales. E-commerce is the buying and selling of goods and services, or the transmitting of funds or data, over an electronic network, primarily the internet. These business transactions occurs business- to- business, business-to-consumer, consumer -to-consumer or consumer-to-business. The terms e-commerce and e-business are often used interchangeably. The term e-tail is also sometimes used in reference to transactional process around online retail. E-commerce is conducted using a variety of applications, such as email, fax, online catalogs and shopping carts, E electronic Data Interchange (EDI), File Transfer protocol, and Web services. Most of this is business- to- business, with some companies attempting to use email and fax for unsolicited ads to consumer and other business prospects, as well as to send out e- newsletters to subscribers.

2. Related work

E-commerce has improved business operations, the operations function is that part of the organization that is concerned with the management of the business process that produces the

goods and services supplied to the customer. These processes of order fulfillment and delivery are the heart of every business as they are the means by which an organization satisfies its customers. An organization can be considered to have e-operations if it uses information technologies (ICT) in the management of its order fulfillment and delivery processes.

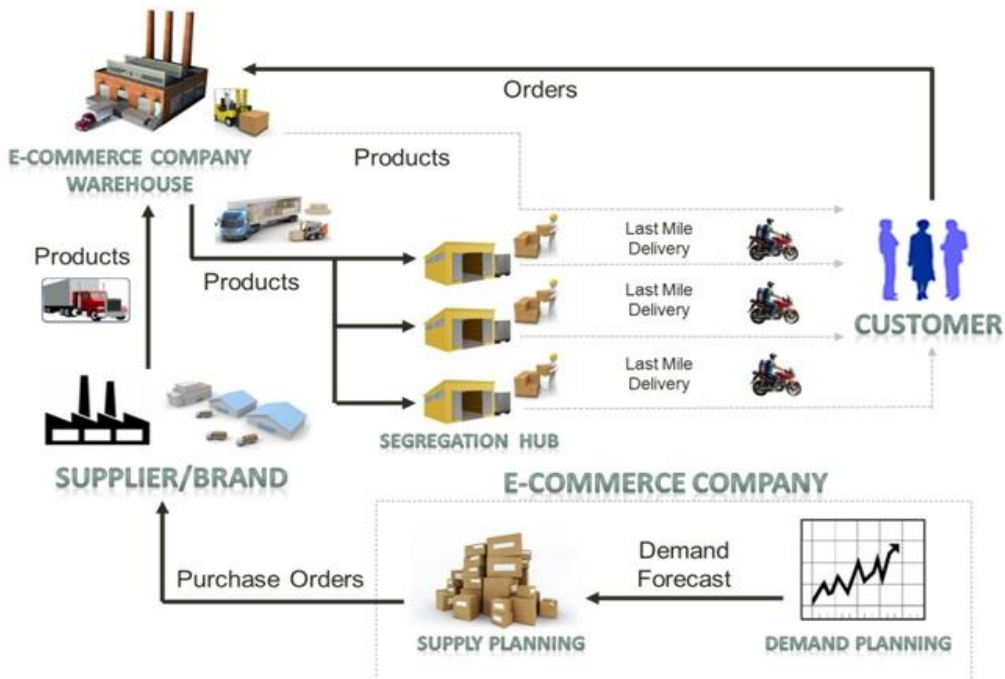
E-commerce enables accessibility of markets that would have been otherwise inaccessible without automation. This is for example customers who wish to carry out transaction at night are taken care of by the use of ATMs. This process leads to transformation of traditional market chain. Retained and expanded customer base and acquisition of a niche market. By the use of internet and electronic fund transfer, banks are able to serve customers who are in places where they do not have branches.

Business challenges include customer service where the bank will lose the personalized service that it offered its customers. When this personal feel is lost, customer loyalty may be reduced or entirely lost. Customer`s old habits; customers may stick with the old habits and may not be ready to adopt change. They may even lack trust for the new technology and hence your e-commerce system may be underutilized.

3. Role of E-Commerce

The main services provided by e-commerce are as follows:

- E-mail
- Video conferencing
- E-shopping
- E-banking



Schematic Diagram by Alvis Lazarus
Reference - www.alvislazarus.com/MyBlog

Fig 1: Process of E-Commerce

4. Types of E-Commerce

4.1. B2B (Business to Business)

Business to business is commerce transaction between businesses, such as between a manufacture and a wholesaler or between a wholesaler and a retailer. Pricing is based on quantity of order and often negotiable

4.2. B2C (Business to Consumer)

Business to consumer transaction conducted directly between a company and consumer who are the end user of its product or services. Business to consumer as a business model differs significantly from the business to business model, which refers to commerce between two or more business.

4.3. C2B (Consumer to Business)

Consumer to business is a business model in which consumer individual’s creative value and business consume that value. C2B model, also called a reverse auction or demand their own price, which is often binding, for a specific good or service. The website collects the demand bids then offers the bids to participating sellers.

4.4. C2C (Consumer to Consumer)

Consumer to consumer markets is innovative way to allow customer to interact with each other. While traditional markets require business to customer relationship, in which a customer goes to the business in order to purchase a product or service. In customer to customer markets the business facilitates an environment where customer can sell these goods or services to each other.

5. Advantages of E-Commerce

- Time saving
- No time constraint
- Price or product comparisons

- Cost effective
- Improved customer interaction
- Simple and easier exchange of information
- Lower transaction cost
- Easy arrangement of product
- Easy transaction
- Low operating cost

6. Disadvantage of E-Commerce

- Security
- Fake websites
- Long delivery timing
- Limitation of products
- More shipping cost
- Limited advertising
- Fraud detection

7. Data Analysis and Findings

7.1. Organization Profile

Amazon.com is a Fortune 500 e-commerce company based in Seattle, WA. Amazon was one of the first big companies to sell goods over the Internet. The company was founded by Jeff Bezos in 1994, and launched in 1995. They started out as an online bookstore and then quickly diversified by adding other items, such as VHS tapes and DVDs, music CDs, software, video games, electronics, MP3s, clothing, furniture, toys and even food items. In 1999 Time Magazine named Bezos its 1999 Person of the Year. This was largely in recognition of the company's success in popularizing online shopping.

7.2. Data Collection

Data was collected from the official website of Amazon, we collect the data for revenue/sales details, gross profit details, net profit details during the year of 2011 to 2015.

Table 1: Revenue\Sales Details

Year	Sales Revenue Details In Billion(\$)
2011	48.08
2012	61.09
2013	74.45
2014	88.99
2015	107.01

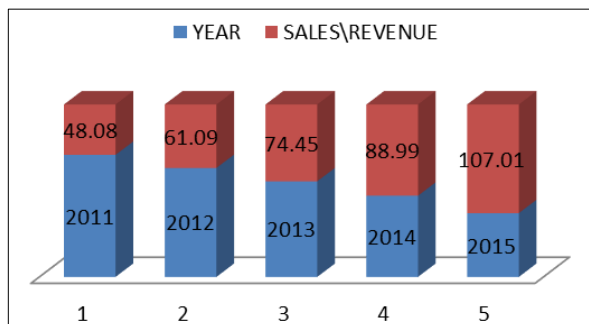


Fig 2: Sales Revenue Details

Table 2: Gross Profit Details

Year	Gross Profit Details In Billion(\$)
2011	10.79
2012	14.29
2013	19.82
2014	25.11
2015	34.02

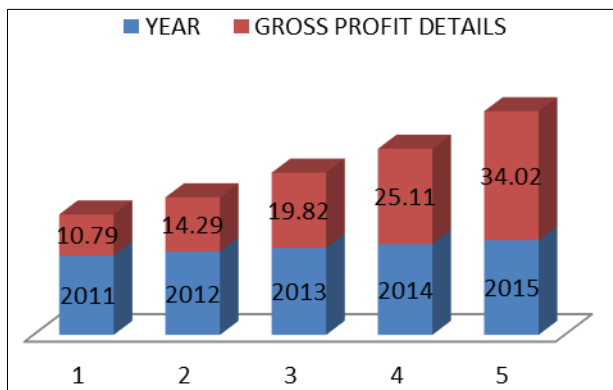


Fig 3: Gross Profit

Table 3: Comparison of Different Statistical Data Analysis

Methodology	Sales	Gross Profit	Net profit
Mean	75.924	20.80	75.92
Median	74.45	19.82	74.45
Mode	71.5	17.860	71.510
Chi-square	533.6476	90.0424	533.6476

8. Conclusion

India is a second largest population in Asia. Every people have different desire to buy the goods from different area, but 21st century having good opportunity of e-commerce. The e-commerce current ratio (2015) is 8.3 billion dollars sales in India, but illiteracy people are not believe that online sales and marketing, educated, rural people are easily adapt and accept the new type e-commerce products. The future e-commerce is difficult to predict. It reduces business overhead and enhances business management. In this paper calculate the mean,

median, mode, chi-square value for revenue\sales details, gross profit details, net profit details on last five years. The Amazon organization is a best online sale in India and abroad. These organization account details are helpful to calculate the statistical value and produce a result as graphically. E-Commerce is a wide area, In future scope we implement that data set values are implemented in data mining algorithms.

Reference

1. Huang Z, Benyoucef M. From e-commerce to social commerce research and application, 2012.
2. Eastin Mathew S. Diffusion of e-commerce: an analysis of the adaption of four e-commerce activities, telematics and informatics 2002; 19(3):251-267.
3. Lawrence E *et al.* Internet and e-commerce Newyork, wiley, 1998.
4. Website: www.amazon.com