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**ECONOMIC IMPACT OF E-COMMERCE ON THE RETAIL SECTOR  
IN BIJNOR DISTRICT: AN EMPIRICAL STUDY**

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**ABSTRACT**

The rapid expansion of e-commerce has significantly transformed the structure and functioning of the retail sector across developing regions. The present study examines the economic impact of e-commerce on the retail sector in Bijnor District. The study is based on primary data collected from 320 respondents through a structured questionnaire. Statistical tools such as frequency, percentage, reliability analysis, and one-sample t-test were used for data analysis. The findings reveal that e-commerce has positively influenced the retail sector by increasing sales, improving retailer income, altering pricing patterns, enhancing market reach, reducing operational costs, and strengthening competitiveness. The study also finds that consumer attitudes toward e-commerce are largely favorable, particularly in terms of convenience, trust, product variety, and price comparison. Reliability analysis confirms that all constructs used in the study are statistically acceptable, with Cronbach's Alpha values above 0.70. Hypothesis testing shows that the impact of e-commerce on the retail sector, retail efficiency, and consumer attitude is statistically significant. The study concludes that e-commerce has emerged as a powerful driver of retail transformation in Bijnor District and has made a substantial contribution to the local retail economy.

**KEYWORDS:** E-commerce, Retail Sector, Economic Impact, Consumer Attitude, Retail Efficiency, Bijnor District, Market Reach, Competitiveness.

## **1. INTRODUCTION**

In the contemporary business environment, e-commerce has emerged as one of the most influential developments affecting trade and commerce. The increasing penetration of the internet, digital payment systems, smartphones, and logistics infrastructure has enabled businesses to move beyond traditional retail frameworks and adopt online platforms for buying and selling goods and services. E-commerce has not only changed the purchasing behavior of consumers but has also transformed the operational strategies of retailers.

The retail sector, which forms a crucial part of the local economy, has experienced substantial changes due to the rise of online commerce. Retailers now have opportunities to expand their market reach, reduce operating costs, respond more quickly to consumer preferences, and enhance service quality. At the same time, consumers are benefiting from greater convenience, better price comparison, wider product variety, and easy access to goods from multiple vendors.

In districts like Bijnor, where traditional retail practices have long dominated the market structure, the growth of e-commerce presents an important area of study. The changing patterns of sales, competition, income, and customer behavior require empirical investigation to understand the actual impact of e-commerce at the district level. Therefore, the present study attempts to examine the economic impact of e-commerce on the retail sector in Bijnor District and assess its implications for retailers as well as consumers.

## **2. Statement of the Problem**

The rapid growth of e-commerce has introduced new opportunities and challenges for the traditional retail sector. While online commerce is often viewed as a catalyst for growth, efficiency, and competitiveness, its real economic impact at the local level remains insufficiently explored. In Bijnor District, where retail activities are an important part of the local economy, it is necessary to understand whether e-commerce has positively contributed to sales, income, efficiency, and consumer satisfaction, or whether its effects are uneven across different retail dimensions. This study addresses this gap by empirically examining the economic influence of e-commerce on the retail sector in Bijnor District.

## **3. Objectives of the Study**

The major objectives of the study are as follows:

1. To examine the economic impact of e-commerce on the retail sector in Bijnor District.

2. To analyze the benefits of e-commerce for retailers in terms of market reach, cost reduction, and income opportunities.
3. To study the role of e-commerce in improving retail efficiency and competitiveness.
4. To assess consumer attitudes toward e-commerce services in Bijnor District.
5. To test the statistical significance of the impact of e-commerce on the retail sector.

#### **4. Hypotheses of the Study**

The study is based on the following hypotheses:

##### **Null Hypotheses**

- **H01:** E-commerce has no significant economic impact on the retail sector in Bijnor District.
- **H02:** E-commerce does not significantly improve retail efficiency, market reach, and competitiveness.
- **H03:** Consumers do not have a significantly positive attitude toward e-commerce services in Bijnor District.
- **Alternative Hypotheses**
- **H11:** E-commerce has a significant economic impact on the retail sector in Bijnor District.
- **H12:** E-commerce significantly improves retail efficiency, market reach, and competitiveness.
- **H13:** Consumers have a significantly positive attitude toward e-commerce services in Bijnor District.

#### **5. RESEARCH METHODOLOGY**

The present study is empirical in nature and is based on primary data. Data were collected from 320 respondents in Bijnor District through a structured questionnaire. The respondents included retailers, business owners, service employees, students, homemakers, and others who were aware of or engaged with e-commerce platforms.

The study used both descriptive and inferential statistical tools. Frequency and percentage analysis were applied to examine the demographic profile of respondents. Reliability analysis using Cronbach's Alpha was employed to test the internal consistency of the constructs. One-sample t-test was used to assess whether the responses on various dimensions of e-commerce were statistically significant.

## Sample Size

The study was conducted on a sample of **320 respondents**.

## Tools Used for Analysis

- Frequency
- Percentage
- Cronbach's Alpha
- One-Sample t-test

## 6. Demographic Profile of Respondents

The demographic profile of respondents provides an overview of the sample characteristics and helps in understanding the context of the study.

**Table 1: Gender of the Respondents.**

Gender	Frequency	Percent
Male	236	73.8
Female	84	26.3
Total	320	100.0

### Interpretation:

The sample was male-dominated, with 73.8 percent male respondents and 26.3 percent female respondents.

**Table 2: Age Group of the Respondents.**

Age Group	Frequency	Percent
Below 20 Years	133	41.6
21–30 Years	105	32.8
31–40 Years	41	12.8
41–50 Years	32	10.0
Above 50 Years	9	2.8
Total	320	100.0

### Interpretation:

A large majority of respondents were young, with 74.4 percent belonging to the below 20 years and 21–30 years age groups combined.

**Table 3: Educational Qualification of the Respondents.**

<b>Educational Qualification</b>	<b>Frequency</b>	<b>Percent</b>
Up to Secondary	44	13.8
Senior Secondary	63	19.7
Graduate	112	35.0
Postgraduate	91	28.4
Professional/Other	10	3.1
Total	320	100.0

**Interpretation:**

Most respondents were graduates or postgraduates, indicating a comparatively educated sample.

**Table 4: Occupation of the Respondents.**

<b>Occupation</b>	<b>Frequency</b>	<b>Percent</b>
Retailer	184	57.5
Service Employee	32	10.0
Business Owner	50	15.6
Student	34	10.6
Homemaker	10	3.1
Other	10	3.1
Total	320	100.0

**Interpretation:**

The majority of respondents were retailers, making the sample highly relevant to the study.

**Table 5: Monthly Income of the Respondents.**

<b>Monthly Income</b>	<b>Frequency</b>	<b>Percent</b>
Below ₹20,000	18	5.6
₹20,001–40,000	60	18.8
₹40,001–60,000	105	32.8
Above ₹60,000	137	42.8
Total	320	100.0

**Interpretation:**

Most respondents belonged to middle- and higher-income groups, suggesting substantial commercial engagement and purchasing power.

**Table 6: Area of Residence of the Respondents.**

<b>Area of Residence</b>	<b>Frequency</b>	<b>Percent</b>
Rural	12	3.8
Urban	187	58.4
Semi-Urban	121	37.8
Total	320	100.0

**Interpretation:**

Urban and semi-urban respondents dominated the sample, showing higher exposure to e-commerce infrastructure and services.

**Table 7: Frequency of Using E-Commerce Platforms.**

Frequency of Use	Frequency	Percent
Very Frequently	222	69.4
Frequently	77	24.1
Occasionally	10	3.1
Rarely	9	2.8
Never	2	0.6
Total	320	100.0

**Interpretation:**

A very high proportion of respondents were frequent users of e-commerce platforms, confirming their suitability for the study.

**7. Reliability Analysis**

Reliability analysis was conducted to test the internal consistency of the study constructs.

**Table 8: Reliability Statistics.**

Construct	Cronbach's Alpha	No. of Items	Interpretation
Economic Impact on Retail Sector	0.798	5	Good
Benefits to Retailers	0.831	5	High
Retail Efficiency and Competitiveness	0.794	5	Good
Consumer Attitude toward E-Commerce	0.712	5	Acceptable

**Interpretation:**

All constructs showed Cronbach's Alpha values above 0.70, indicating acceptable to high reliability. Therefore, the questionnaire items were found suitable for further analysis.

## 8. Data Analysis and Interpretation

### 8.1 Economic Impact of E-Commerce on Retail Sector

Statement	Mean	Std. Deviation	t-value	Sig.
E-commerce has increased the overall sales of retail businesses in Bijnor district	4.37	0.736	106.275	0.000
The growth of e-commerce has positively influenced the income of retailers	4.21	0.677	111.074	0.000
E-commerce has affected pricing patterns in the retail market	4.46	0.694	115.008	0.000
Online platforms have contributed to economic growth in the retail sector	4.25	0.694	109.519	0.000
E-commerce has significantly changed the traditional retail business structure	4.22	0.663	113.784	0.000

#### Analysis:

The mean values ranging from 4.21 to 4.46 indicate strong agreement among respondents that e-commerce has significantly influenced the retail sector. The highest agreement was observed for the statement on changing pricing patterns, suggesting that e-commerce has intensified price competition and market transparency. The high t-values and significant p-values confirm that these perceptions are statistically meaningful.

### 8.2 Benefits of E-Commerce for Retailers

Statement	Mean	Std. Deviation	t-value	Sig.
E-commerce has expanded the market reach of retailers in Bijnor district	4.17	0.658	113.204	0.000
Online selling has reduced operational and marketing costs for retailers	4.01	0.576	124.547	0.000
E-commerce provides better opportunities for small retail businesses	4.04	0.586	123.247	0.000
Retailers benefit from faster transactions through e-commerce platforms	4.05	0.593	122.013	0.000
E-commerce has created additional income opportunities in the retail sector	4.14	0.662	111.743	0.000

#### Analysis:

All mean values are above 4.00, which indicates that respondents strongly recognized the benefits of e-commerce for retailers. The data suggest that online commerce supports wider market access, lowers business costs, improves transaction speed, and creates new earning possibilities.

### 8.3 E-Commerce and Retail Efficiency

Statement	Mean	Std. Deviation	t-value	Sig.
Retail businesses using e-commerce operate more efficiently than traditional retailers	4.38	0.694	112.982	0.000
E-commerce integration improves inventory and supply chain management	4.19	0.672	111.663	0.000
Retailers using e-commerce respond better to customer demands	4.06	0.563	128.962	0.000
Service quality has improved due to the adoption of e-commerce	4.10	0.642	114.278	0.000
E-commerce integration has increased competitiveness among retailers	4.14	0.658	112.551	0.000

#### Analysis:

The results indicate that e-commerce has significantly improved retail efficiency. Respondents strongly agreed that online-enabled businesses operate more efficiently, manage inventory better, respond faster to consumers, and maintain better service quality and competitiveness.

### 8.4 Consumer Attitudes toward E-Commerce.

Statement	Mean	Std. Deviation	t-value	Sig.
I prefer purchasing products through e-commerce platforms	4.08	0.633	115.305	0.000
E-commerce provides more convenience than traditional retail shopping	3.93	0.671	104.890	0.000
I trust online payment and delivery systems	4.07	0.727	100.149	0.000
E-commerce offers better product variety and price comparison	4.20	0.723	103.887	0.000
Overall, I am satisfied with e-commerce services available in Bijnor district	3.89	0.718	97.030	0.000

#### Analysis:

Consumer attitudes were found to be favorable toward e-commerce. Respondents appreciated the convenience, trust, product variety, and price comparison provided by online platforms. Although overall satisfaction scored slightly lower than the other statements, it still remained positive.

## 9. Summary of Construct-wise Mean Scores

**Table 9: Summary of Major Dimensions.**

Construct	No. of Items	Mean Range	Overall Interpretation
Economic Impact on Retail Sector	5	4.21–4.46	Strong Agreement
Benefits to Retailers	5	4.01–4.17	Strong Agreement
Retail Efficiency and Competitiveness	5	4.06–4.38	Strong Agreement
Consumer Attitude toward E-Commerce	5	3.89–4.20	Positive Agreement

### Interpretation:

All constructs recorded positive mean values close to or above 4.00. This demonstrates a broad-based positive perception of e-commerce across economic, operational, and consumer dimensions.

## 10. Hypothesis Testing

**Table 10: Hypothesis Testing Summary.**

Hypothesis	Statement	Result
H01	E-commerce has no significant economic impact on the retail sector in Bijnor District	Rejected
H11	E-commerce has a significant economic impact on the retail sector in Bijnor District	Accepted
H02	E-commerce does not significantly improve retail efficiency, market reach, and competitiveness	Rejected
H12	E-commerce significantly improves retail efficiency, market reach, and competitiveness	Accepted
H03	Consumers do not have a significantly positive attitude toward e-commerce services in Bijnor District	Rejected
H13	Consumers have a significantly positive attitude toward e-commerce services in Bijnor District	Accepted

### Analysis:

All null hypotheses were rejected on the basis of statistically significant one-sample t-test results. Therefore, the study confirms that e-commerce has a significant positive impact on the retail sector, retail efficiency, and consumer attitudes in Bijnor District.

## 11. Major Findings of the Study

The major findings of the study are as follows:

1. The majority of respondents were male, young, educated, urban or semi-urban, and frequent users of e-commerce platforms.
2. All constructs used in the study showed acceptable to high reliability.

3. E-commerce was found to significantly increase retail sales and retailer income.
4. It has influenced pricing patterns and changed the traditional retail structure.
5. Retailers benefit from greater market reach, lower operating costs, faster transactions, and additional income opportunities.
6. E-commerce improves retail efficiency, inventory management, service quality, and competitiveness.
7. Consumers hold a favorable attitude toward e-commerce, especially due to convenience, trust, product variety, and price comparison.
8. The statistical tests confirmed that the economic and operational impact of e-commerce is significant in Bijnor District.

## **12. CONCLUSION**

The study concludes that e-commerce has become a powerful instrument of change in the retail sector of Bijnor District. It has positively affected the economic structure of retail business by improving sales, income, efficiency, and competitiveness. At the same time, it has gained strong acceptance among consumers who view it as convenient, reliable, and advantageous.

The results indicate that e-commerce is not merely an optional business model but an important driver of retail transformation. Its contribution to market expansion, cost reduction, consumer satisfaction, and business modernization makes it a significant component of local economic development. Thus, the study provides empirical evidence that e-commerce has had a substantial and positive economic impact on the retail sector in Bijnor District.

## **13. SUGGESTIONS**

On the basis of the findings, the following suggestions may be offered:

1. Retailers should be encouraged to adopt digital platforms to expand their market reach and improve competitiveness.
2. Training programs should be organized to enhance digital literacy and e-commerce skills among small retailers.
3. Better internet connectivity and logistics support should be developed in rural and semi-urban areas.
4. Policymakers should support local retailers through digital infrastructure, awareness campaigns, and financial incentives.

5. E-commerce service providers should work on improving customer satisfaction, especially in delivery and after-sales services.

#### **14. Limitations of the Study**

The study is limited to Bijnor District and is based on responses from 320 respondents only. Therefore, the findings may not be generalized to all regions. The study is also based on primary perceptions of respondents and does not include secondary financial data of retail businesses.

#### **15. Scope for Further Research**

Further studies may be conducted in other districts or states for comparative analysis. Researchers may also examine the long-term impact of e-commerce on small retailers, employment generation, rural markets, and consumer loyalty patterns.

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