

INTERNATIONAL RESEARCH JOURNAL OF MANAGEMENT SOCIOLOGY & HUMANITIES



ISSN 2277 – 9809 (online)

ISSN 2348 - 9359 (Print)

An Internationally Indexed Peer Reviewed & Refereed Journal

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Published by iSaRa Solutions

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

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Abstract

The ecommerce boom has revolutionized the retail landscape and its operations in the developing world. The present study investigates the effect of e-commerce on retail sector in Bijnor District with its economic implications. The study sought to use primary data and 320 respondents were reached using a structured questionnaire. Data was analyzed using statistical tools of frequency, percentage, reliability analysis, and one-sample t-test. The results show that e-commerce has positively affected retail trade in terms of sales, profitability of retailers, pricing, market access, cost reduction and competitiveness. The study also shows that consumer attitudes are mostly positive towards e-commerce, in relation to convenience, trust, choice of products and comparison prices. The results of the reliability analysis shows that all constructs used in the study are statistically acceptable with Cronbach Alpha values above 0.70. The result of the hypothesis test reveal that e-commerce has some statistically significant effects on the retail sector, retail efficiency and consumer attitude. The study is used to draw a conclusion that the e-commerce has become a strong catalyst in the transformation of the retail sector of Bijnor District and has a significant contribution to the retail economy of the district.

Keywords

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

1. Introduction

E-commerce is one of the most significant advancements in the modern business landscape that has impacted the trade and commerce. The recent digitalization of the Internet, digital payment

systems, smartphones, and logistics systems has allowed companies to rethink their traditional retail models and shift to online trading of goods and services. The online retail environment has not only influenced the way consumers buy, it has also rocked retailers' business models. The ecommerce landscape has not only shifted consumer buying habits, it's also shaken up retailers' business models.

The retail industry makes up an important component of the local economy, and with the advent of ecommerce, there have been significant shifts in this sector. Retailers are now able to increase the area of their market, cut down on running expenses, be more responsive to consumer tastes and improve the level of service. Meanwhile, consumers are enjoying more convenience, options for better comparison shopping, choice of product, and easy access to goods from various vendors.

The emergence of e-commerce in districts like Bijnor, where the market is traditionally retail-centric, is a significant field of research. This demands an empirical study to understand the actual impact of e-commerce at district level due to the changing pattern of sales, competition, income, and customer behavior. Thus, the present study tries to explore the impact of e-commerce on retailing in Bijnor District and its implications for the retailers and consumers.

2. Statement of the Problem

The e-commerce boom has created fresh opportunities and challenges for the traditional retail industry. If online commerce has been recognized as a growth driver, an efficient and competitive way of doing business, its economic value at the local level has not been sufficiently researched. As retail activities are playing a significant role in the local economy of Bijnor District, it is important to assess if ecommerce has positively contributed to the sales, income, efficiency and consumer satisfaction across various retail facets or not? This study aims to fill this gap by empirically exploring the economic effect of e-commerce on the retail sector in Bijnor District.

3. Objectives of the Study

The following are the main goals of the research:

1. To study the economic effect of e-commerce in the retail business of Bijnor District.
2. To discuss the advantages of ecommerce for retailers, such as reach, cost and earnings.
3. To learn how e-commerce is contributing to making retail more efficient and competitive.
4. To evaluate consumer attitudes towards e-commerce services of Bijnor district.
5. To ascertain the statistical significance of the effect of E commerce on retail sector.

4. Hypotheses of the Study

The study is based on the following hypotheses:

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.

5. Research Methodology

This study is empirical with primary data. A structured questionnaire was used to collect the data from 320 respondents in Bijnor District. The respondents comprised the people who knew and interacted with the ecommerce platforms whether they were retailers, business owners, service providers, students, homemakers, or others.

Descriptive and Inferential Statistical tools were used in the study. The demographic profile of the respondents was analysed using frequency and percentage analysis. To test the internal consistency of constructs, reliability analysis was done by Cronbach's Alpha. To check the statistical significance of the answers provided on different dimensions of e-commerce, One sample t test was used.

Sample Size

The study included 320 respondents for its sample size and conducted empirical analysis on that.

Tools Used for Analysis

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

6. Demographic Profile of Respondents

Given Table 1 provides for demographic profile of survey subjects including male and female respondents.

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

Educational Qualification	Frequency	Percent
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

Occupation	Frequency	Percent
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

Monthly Income	Frequency	Percent
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

Area of Residence	Frequency	Percent
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. Under this analysis respondents provided highest agreement for the statement stating that e-commerce has led to intensification of competition

based on prices. Moreover, the corresponding t and p values also confirm the significance of perceptions.

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:

The analysis shown above provide that all mean values fall over 4.00 and that indicates that retailers have benefitted from e-commerce. 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 analysis in the table given above shows that e-commerce has proved beneficial for retailers and has led to improvement in their efficiency. Respondents also agreed about the efficiency of online businesses.

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:

The analysis provided in the above section shows that respondents has great appreciation for trust, convenience and product variety. They were also happy with the price comparisons provided online. Although overall satisfaction score was not high as compared to other inferences it still was 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:

As it can be seen from the mean analysis given above the mean scores for all were positive and scored value which was above 4.00, it demonstrates that people have positive perception of e-commerce.

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:

As per the table given above and the analysis therein all null hypotheses faced rejection on the

basis of statistical significance of t test. Hence it can be confirmed that e-commerce casts crucial impact on retail sector, efficiency of retail sector and attributes of consumers in District of Bijnor.

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

Based on the study results, it can be concluded that e-commerce is a great tool which can bring a change in the retail industry in Bijnor District. It has positively contributed to the economic structure of retail business in terms of its sales, income, efficiency and competitiveness. Concurrently, it has become widely accepted by consumers who see it as convenient, reliable and beneficial.

The findings show that ecommerce is not only a business model that can be adopted but a key enabler for retail transformation. It plays an important role in local economic development in helping expand the market, reduce costs, enhance consumer satisfaction and modernize businesses. Hence, the study has introduced empirical evidence of tremendous positive economic contribution of ecommerce in retail sector to Bijnor District.

13. Suggestions

The following suggestions could be made based on the results:

1. Retailers should be encouraged to embrace a digital platform to create a wider market and increase competitiveness.
2. Small retailers' digital literacy and e-commerce skills should be improved through training programmes.
3. Improve the internet connectivity and logistics support in rural and semi-urban areas.
4. Policymakers can help local retailers with digital infrastructure, awareness campaigns and financial incentives.
5. E-commerce service providers should focus on enhancing the satisfaction of their customers in particular referring to delivery and after sales services.

14. Limitations of the Study

This study is only concerned with the Bijnor District and only 320 respondents have been taken into consideration. Thus, the conclusions are not applicable to other regions. Primary perceptions of respondents are also used in the study and no secondary financial information of the retail business is included.

15. Scope for Further Research

Further studies can also be carried out in other districts or States for comparison. Long-term effects of ecommerce on small retailers, jobs, rural markets, consumer loyalty trends can also be explored.

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