

Effect of E-Commerce in the Retail Trade in India: A Study in the District of Darjeeling

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ABSTRACT

The rapid growth of e-commerce has significantly impacted the retail landscape in India, presenting both opportunities and challenges for retailers. This study aims to examine the factors influencing retailers' adoption of e-commerce and evaluate its impact on their business performance in the district of Darjeeling, West Bengal, India. A mixed-methods approach was employed, utilizing a structured questionnaire and interviews with store owners and managers. The sample consisted of 75 retailers from various business sectors. The findings reveal that factors such as fast and reliable delivery, efficient settlement processes, user-friendly applications, and competitive pricing are critical drivers of e-commerce adoption. Retailers reported overwhelmingly positive impacts on their business performance, with 93.4% indicating an overall positive effect, particularly in terms of expanding customer base and increasing profit margins. Hypothesis testing revealed significant differences between e-commerce adoption factors and demographic variables, as well as between the impact of e-commerce and demographic variables. Furthermore, a significant association was identified between overall adoption factors and the overall impact on business performance. The study highlights the strategic importance of e-commerce for retailers in Darjeeling and suggests that prioritizing operational excellence, enhancing user experience, and focusing on digital marketing are key to maximizing its benefits. These findings have important implications for retailers, policymakers, and business leaders in developing strategies to support and promote e-commerce adoption in similar markets.

Keywords: E-Commerce, Retail Trade, Business Performance, Adoption Factors, Darjeeling, Mixed-Methods, & India, etc.

INTRODUCTION

E-commerce, commonly referred to as online shopping, encompasses the buying and selling of goods and services via the internet. This process involves the exchange of monetary and informational resources to facilitate transactions. The inception of e-commerce can be traced back to 11/08/1994, marked by the sale of a CD by the band Sting to a friend through a website known as NetMarket, representing the first e-commerce transaction. E-commerce is categorized into four primary types: (i) business-to-consumer (B2C), where businesses sell directly to individual consumers; (ii) business-to-business (B2B), where transactions occur between businesses; (iii) consumer-to-consumer (C2C), where individuals sell to one another; and (iv) consumer-to-business (C2B), where individuals offer products or services to businesses. India, with its rapidly expanding economy, presents significant opportunities for retailers and brands across various sectors, driven by its substantial population, increasing income levels, expanding employment opportunities, and heightened consumer awareness. The Indian retail market, valued at more than US\$ 600 billion, ranks among the top five globally in terms of economic value, serving a population of more than 1.3 billion. In contemporary commerce, the necessity of a physical storefront has diminished, as businesses can operate entirely online. Prominent companies such as Amazon and Flipkart primarily function through online platforms, demonstrating that physical stores are not essential for success. Numerous businesses, ranging from large retailers to smaller enterprises, maintain both physical and online presences, thereby expanding their reach and revenue potential. So, looking at the factors influencing the growth of e-commerce in India is both important and timely. The present study aims to analyse the factors influencing retailers to adopt e-commerce for their business and their business performance thereafter the adoption of e-commerce.

LITERATURE REVIEW

Several studies have been conducted by many researchers and academicians over time on e-commerce and its impact on the retail business sector in India. Some of the important studies are shown below as a review of previous literature.

Chopra et al. (2018) define e-commerce as the online buying and selling of goods and services in the contemporary business environment. The authors highlight the rapid growth of Internet usage in India, projecting that 37.36% of the population will be online by 2021. This study investigates the impact of e-commerce on business, including the creation of international marketplaces, reduction in operational costs, product customization, and the enhancement of customer service. The identified challenges include inadequate technological infrastructure, security concerns, and the need for qualified personnel. This study explored the effects of e-commerce on business models, supply chains, consumer trust, and markets. The findings indicate that e-commerce significantly influences businesses by expanding global reach and reducing costs, while also presenting challenges, such as increased competition and IT infrastructure demands. For consumers, e-commerce offers greater choice and convenience but also raises security concerns. Although e-commerce provides numerous advantages, developing countries such as India face infrastructure challenges. This research projects the growth of India's e-commerce sector from \$15 billion in 2016 to \$200 billion by 2026, underscoring its potential in emerging markets and the necessity for businesses to adapt.

Gaikwad (2023) conducted an analysis of the advantages and disadvantages of e-commerce in relation to India's retail sector. E-commerce presents challenges to traditional businesses, including reduced profit margins, financial pressures, and security issues, while simultaneously offering benefits such as convenience, a wider range of products, and competitive pricing. The study underscores the necessity for retailers to adapt their strategies to remain competitive in an evolving retail environment.

Kumar (2023) defined e-commerce as the process of buying and selling goods online. This document examines the prospects of e-commerce in India, emphasizing the increasing number of Internet users and the growing adoption of online shopping. It forecasts substantial market expansion and identifies key challenges, including high return rates, preference for cash-on-delivery, payment failures, limited Internet access, and logistical issues. The factors contributing to growth include the use of social media, business acumen, transparency, customer service, and diverse payment options. E-commerce is establishing a new economic model in India that impacts various sectors and creates opportunities for retailers, wholesalers, producers, and individuals. The future appears promising, provided that the essential growth factors are effectively implemented.

Kumar and Pasha (2024) examined the impact of e-commerce on local retail establishments. The report underscores the challenges faced by merchants, changes in consumer preferences, and the adoption of hybrid retail strategies. Among the identified challenges are issues related to consumer trust, high entry costs, logistical difficulties, and digital illiteracy. The article recommends the promotion of hybrid business models, implementation of digital literacy initiatives, enhancement of digital infrastructure, and an increase in consumer awareness.

Kumari and Narula (2019) defined e-commerce as the process of buying and selling products and services via the Internet. This mode of commerce has enhanced convenience for consumers in India by offering numerous advantages. The article delineates various types of markets, including physical, virtual, auction, intermediate goods, black markets, knowledge markets, and financial markets, as well as different categories of retailers, such as department stores, supermarkets, warehouse retailers, and specialty retailers in India. E-commerce has demonstrated substantial growth in India, impacting the traditional retail markets. It provides benefits, such as increased accessibility, reduced costs, broader selection, and time savings for consumers. The e-commerce sector in India is anticipated to undergo rapid expansion, with projections indicating that it could achieve \$100 billion in online retail revenue by 2020, with apparel sales increasing fourfold. Despite the rapid growth of e-commerce in India, there are several challenges. The government must establish an appropriate legal framework to mitigate obstacles to its development. Nevertheless, the industry offers significant growth opportunities and disrupts the traditional retail models.

Noor (2018) examines the influence of e-commerce on the transition of retail from traditional to online platforms. The proliferation of Internet platforms, such as Amazon and Alibaba, has propelled the growth of e-commerce by offering convenience and global accessibility. The COVID-19 pandemic has further accelerated this growth, underscoring the significance of digital transformation. E-commerce facilitates access to global markets, reduces costs, and provides data to optimize marketing strategies. Innovations in logistics, including same-day and drone deliveries, have revolutionized product delivery. Despite an increase in cross-border trade, challenges in logistics and sustainability persist. Emerging technologies, such as augmented reality (AR), virtual reality (VR), and blockchain, are anticipated to enhance the online shopping experience. This study proposes strategies for adapting to e-commerce and identifies future trends. E-commerce has fundamentally transformed retail, with digitally transformed retailers better positioned for success.

Singh, et al. (2022) analysed the growth, challenges, and prospects of India's e-commerce industry. The market was projected to reach \$66.76 billion in 2021, with an annual growth rate of 27%. The study encompasses the B2B, B2C, C2C, and B2B2C models and evaluates the impact of government initiatives on the sector. The expansion of e-commerce has been attributed to increasing Internet penetration, smartphone adoption, and digital payment systems. It is anticipated that the number of Internet users in India will reach 900 million by 2025, with rural areas surpassing urban areas. The retail e-commerce market is expected to reach \$350 billion by 2030, with a compound annual growth rate (CAGR) of 23%. The COVID-19 pandemic has accelerated the global adoption of online retail, resulting in an additional \$900 billion in spending in 2020. The study identifies correlations between e-commerce growth and socioeconomic factors, demonstrating positive relationships with literacy rates and negative correlations with unemployment. The analysis underscores the necessity for cybersecurity measures and legal frameworks to address the challenges related to data privacy and consumer protection.

Varma (2022) examined the impact of e-commerce on retailers in the cities of Visakhapatnam, Vijayawada, and Guntur in Andhra Pradesh. Data were collected from 450 retailers using questionnaires and interviews. This research analysed factors influencing e-commerce adoption, including delivery time, application speed, user-friendliness, customer service, notifications, availability, pricing, credit facilities, product range, packaging, and authenticity. This study explored demographic differences using descriptive statistics and ANOVA. The findings indicate a high level of e-commerce awareness among retailers, with pricing, product range, deliveries, and trust identified as key factors. This study recommends focusing on retailer psychology, application design, and logistics. Retailers in Guntur rated e-commerce more favourably than those in other cities, with younger retailers (21-40 years) predominating in usage in Vijayawada and Guntur, whereas Visakhapatnam exhibited higher technical qualifications among retailers, suggesting the need for localized strategies.

Research Gap

Many studies have been done on the impact of e-commerce on retailers' businesses and the factors influencing retailers to adopt e-commerce in various parts of India. But no such seminal work has been done in the district of Darjeeling, West Bengal, India. The present research work has tried to touch on that unexplored area.

Need for the Study

E-commerce research has predominantly concentrated on B2C, C2C, and C2B transactions, often neglecting B2B transactions in developing countries. Many studies have emphasized the substantial advantages of e-commerce in product sales and business operations. However, the online markets in these regions have not fully embraced e-commerce. In developing countries, such as India, particularly in the district of Darjeeling, West Bengal, the factors influencing e-commerce adoption remain insufficiently explored. Prior research has not adequately examined e-commerce adoption from the perspective of retailers, nor has it integrated the perspectives of both retailers and consumers. There is a paucity of research on the impact of e-commerce on the business performance of retailers in India, especially in the city of Darjeeling in West Bengal. Consequently, further research is necessary to understand the determinants of retailers' e-commerce adoption. Additionally, it is crucial to assess how e-commerce influences retailers' business performance in Darjeeling.

Significance of the Study

A business needs to use internet marketing, particularly in growing nations like India. E-commerce has grown to be a crucial component of marketing thanks to the internet, rising living standards, and online marketplaces like Amazon and Flipkart. It improves the efficiency of business operations and marketing by incorporating electronic ordering, payment systems, customer service, and online marketing. Strategies have changed, and e-commerce apps have grown as a result of e-commerce. It is now a crucial tool for learning about new products, staying competitive, and taking part in industrial progress. A booming economy is built on technology, and e-commerce helps online businesses access a wider audience and reach new markets.

Problem Statement

Retailers need to know what affects e-commerce use to solve problems and see how it impacts their business. E-commerce helps companies cut costs, launch new products, build networks, gather data, and deliver goods and services efficiently. It also helps find new business opportunities. This study looks at why retailers in Darjeeling, West Bengal, India, use e-commerce and how it affects their work.

Objectives of the Study

The objectives of the present study are:

- i. To examine the factors influencing retailers' adoption of e-commerce for their business in Darjeeling.
- ii. To evaluate the impact of e-commerce on retailers' business performance in Darjeeling.
- iii. To analyse the association between retailers' demographic factors and the factors influencing retailers' adoption of e-commerce for their business and business performance in Darjeeling.

RESEARCH METHODOLOGY

Analytical and descriptive methods have been applied in the current study. It is analytical as it involves the examination and evaluation of data, facts, and statistics. Additionally, it is descriptive as it outlines the current state of e-commerce adoption among retailers.

Research Design

The research design constitutes a comprehensive plan for the collection and analysis of data. The study begins by articulating its objectives and the specific problems it seeks to address. It reviews the existing literature to identify the factors that influence e-commerce adoption among retailers. To fulfil the objectives of this study, both qualitative and quantitative methodologies have been employed for data collection. A questionnaire has been prepared and circulated to retailers, followed by interviews with owners and managers of stores to obtain their perspectives, which validated the factors identified in the questionnaire. The collected primary data have been subsequently used to analyse to draw logical conclusions.

Data Source

This study entails an empirical investigation in which respondents' perceptions are utilized as primary indicators. Furthermore, a comprehensive literature review was conducted to synthesize insights from various authors across multiple sources. Therefore, this study incorporated both primary and secondary data. Primary data have been collected from the field survey using a structured questionnaire through direct interviews with the retailer respondents. The reliability of the questionnaire was standardized by applying the Cronbach's alpha test. To facilitate this process, a list of retailers in specific cities was compiled from business directories, Chamber of Commerce databases, and online e-commerce platforms. from a diverse array of sources,

including government reports, websites, books, academic journals, newspapers, and magazines. The theoretical frameworks and concepts have been derived from various research articles, papers published in various scholarly journals.

Methodology

The convenience sampling technique has been applied for the primary data collection phase to investigate the factors influencing e-commerce adoption among retailers in the district of Darjeeling, West Bengal. The survey has been conducted among the retailers who have utilized at least one online shopping tool. Data collection has been conducted through a field survey, in which structured questionnaires have been personally circulated to participants. The most critical aspect of conducting a survey is formulating questions that accurately capture the perceptions, emotions, and behaviours of retailers. The questionnaire is reliable to valid to draw inferences and conclusions as the Cronbach's alpha test result is 0.81. To collect primary data regarding the motivations of retailers in Darjeeling to engage in e-commerce, researchers used questionnaires, personal interviews, and observations. The study utilized the frequency table, percentage, and statistical tools such as the one-sample t-test and chi-square test, have been applied to analyze the primary data to draw a logical conclusion with the help of the SPSS package version 26. Primarily, the researcher engaged in discussions with the proprietors or managers of stores involved in online marketing. Subsequently, a preliminary study was conducted to assess the clarity and reliability of the questions. Finally, a comprehensive survey was conducted using written questionnaires and personal interviews. In Darjeeling District, 75 store owners or managers were solicited to complete the survey during the months of March and April 2025.

Formulation of Hypothesis:

Three sets of hypotheses have been formed for the achievement of the research objectives. They are as below:

H-1: There is no significant difference between factors influencing retailers to adopt e-commerce and various demographic factors of retailers.

H-2: There is no significant difference between the impact of e-commerce on retailers' business performance and various demographic factors of retailers.

H-3: There is no association between overall factors influencing retailers to adopt e-commerce and overall positive impact of e-commerce on retailers' business performance.

Data Analysis and Discussion:

The primary data collected from the field survey through a structured questionnaire has been analyzed and presented below.

Gender of Respondents:

Table 1

Gender		
Gender	Frequency	Percent
Male	45	60
Female	30	40
Total	75	100

(Source: Primary Data)

Observation: The above table shows that 60% of the surveyed respondents are male, whereas 40% of the respondents are female.

Age Group of Respondents:

Table 2

Age Group		
Age Group	Frequency	Percent
Below 20 Yrs	15	20
21 Yrs-30 Yrs	35	46.7
31 Yrs-40 Yrs	10	13.3
41 Yrs - 50 Yrs	10	13.3
Above 50 Yrs	5	6.7
Total	75	100

(Source: Primary Data)

Observation: The above table presents that 46.7% of the surveyed respondents belong to the age group between 21 years – 30 years, whereas 6.7% of the respondents are above the age of 50 years.

Educational Qualification of Respondents:

Table 3

Educational Qualification		
Educational Qualification	Frequency	Percent
MP	5	6.7
HS	15	20
UG	35	46.7
PG	10	13.3
Technical	10	13.3
Total	75	100

(Source: Primary Data)

Observation: The above table shows that 46.7% of the surveyed respondents are undergraduates, whereas 13.3% of the respondents have technical education.

Types of Business of Respondents:

Table 4

Type of Business		
Type of Business	Frequency	Percent
Grocery & Supermarkets	25	33.3
Apparel & Fashion	20	26.7
Electronics & Appliances	5	6.7
Home & Furniture	10	13.3
Pharmacy & Health	10	13.3
Food Corners	5	6.7
Total	75	100

(Source: Primary Data)

Observation: The above table shows that 33.3% of the surveyed retailer respondents belong to the business type of grocery & supermarkets, whereas 6.7% of the respondents are in the business of electronics & appliances and food corners.

Gross Annual Income of the Respondents:

Table 5

Gross Annual Income		
Gross Annual Income	Frequency	Percent
Below Rs.100000	5	6.7
Rs. 100000 – Rs. 500000	25	33.3
Rs. 500001- Rs. 1000000	30	40
Above Rs. 1000000	15	20
Total	75	100

(Source: Primary Data)

Observation: The above table depicts that 40% of the surveyed retailer respondents' gross annual income is between Rs. 500000 to Rs. 1000000, whereas 6.7% of the respondents' annual income is below Rs. 100000.

Factors Influencing Retailers to Adopt E-Commerce:

Table 6

Factors Influencing Retailers to Adopt E-Commerce										
Variables	Most Important		Important		Neutral		Less Important		Least Important	
	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent
Increased Customer Demand for Online Shopping	15	20	45	60	15	20	0	0	0	0
User-Friendly and Easy-to-Navigate Apps	25	33.3	30	40	20	26.7	0	0	0	0
Availability of Genuine and wide Products Range	10	13.3	45	60	20	26.7	0	0	0	0
Competitive Pricing	20	26.7	45	60	10	13.3	0	0	0	0
EMI Facility	25	33.3	40	53.3	10	13.3	0	0	0	0
Fast & Reliable Delivery	30	40	35	46.7	10	13.3	0	0	0	0
Availability of Good Customer Service	20	26.7	45	60	10	13.3	0	0	0	0
Good Settlement Process	30	40	35	46.7	10	13.3	0	0	0	0
Competition from Other Online Retailers	25	33.3	45	60	5	6.7	0	0	0	0
Expansion into New Markets	20	26.7	45	60	10	13.3	0	0	0	0

(Source: Primary Data)

Observation: This table delineates the survey findings regarding the determinants that influence retailers' decisions to adopt e-commerce, organized by their perceived significance. Presented below is a systematic analysis of the data. The most highly ranked factors, categorized as "Most Important" and "Important," are Fast & Reliable Delivery and Good Settlement Process, both receiving a combined score of 86.7%. Additionally, the EMI Facility (86.6%), Competition from Other Online Retailers (93.3%), and User-Friendly Apps (73.3%) also received high scores. Notably, no factor was rated as "Less" or "Least Important" (all 0%), indicating unanimous agreement on the significance of these factors. Neutral responses were minimal ($\leq 26.7\%$), suggesting strong alignment among retailers regarding priorities. In terms of notable trends, Customer Demand for Online Shopping and Wide Product Range received the highest "Neutral" responses (20% and 26.7%, respectively), suggesting these may be considered baseline expectations rather than distinguishing features. Competitive Pricing and Customer Service are deemed critical, with a combined score of 86.7% for "Important/Most Important." The implications for e-commerce adoption are significant.

Operational excellence, including fast delivery, smooth settlements, and EMI options, is crucial for maintaining competitiveness. Furthermore, user experience is paramount; applications must be intuitive, and pricing must remain competitive to retain customers. Market pressure, particularly competition from other retailers (93.3% important/most important), is identified as a major driving force.

Overall Factors Influencing Retailers to Adopt E-Commerce:

Table 7

Overall Factors Influencing Retailers to Adopt E-Commerce		
Variable	Frequency	Percent
Most Important	20	26.7
Important	40	53.3
Neutral	15	20
Less Important	0	0
Least Important	0	0
Total	75	100

(Source: Primary Data)

Observation: Table 7 presents a comprehensive summary of retailers' perceptions regarding the significance of various factors influencing the adoption of e-commerce, aggregated across all variables from the previous data. The analysis reveals that e-commerce adoption is a high priority for retailers, with a combined importance rating of 80%, consisting of 26.7% categorized as "Most Important" and 53.3% as "Important." Notably, no respondents rated any factors as "Less" or "Least Important," highlighting that e-commerce adoption is driven by critical, non-negotiable factors. The presence of neutral responses (20%) indicates that a minority of retailers are either undecided or perceive certain factors as baseline requirements rather than key drivers. The predominance of the "Important" category (53.3%) suggests that while fewer factors are deemed "Most Important" (26.7%), the majority are still considered essential, reflecting a broad consensus on prioritization. It is advisable to concentrate on high-impact areas such as fast delivery, EMI options, and user-friendly applications, in alignment with the "Most Important" criteria. The absence of "Less/Least Important" responses implies that neglecting any factor could jeopardize market share.

Impact of E-Commerce on Retailers' Business Performance:

Table 8

Impact of E-Commerce on Retailers' Business Performance										
Variables	Strongly Agree		Agree		Neutral		Disagree		Strongly Disagree	
	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent
Increased Overall Sales	25	33.3	40	53.3	10	13.3	0	0	0	0
Expanded Customer Base	25	33.3	45	60	5	6.7	0	0	0	0
Improved Inventory Management	25	33.3	40	53.3	10	13.3	0	0	0	0
Reduced Operational Costs	25	33.3	40	53.3	10	13.3	0	0	0	0
Enhanced Customer Engagement	25	33.3	40	53.3	10	13.3	0	0	0	0
Higher Profit Margins	20	26.7	50	66.7	5	6.7	0	0	0	0

(Source: Primary Data)

Observation: Table 8 assesses the impact of e-commerce adoption on retailers' business performance across key metrics. The findings are structured as follows: Key Takeaways indicate an overwhelmingly positive impact, with a strong consensus (86.6–93.4% Agree/Strongly Agree). The most notable benefits include an Expanded Customer Base (93.3%) and Higher Profit Margins (93.4%). Other factors, such as Increased Sales, Cost Reduction, and Customer Engagement, also received scores of $\geq 86.6\%$. There were no negative responses, with 0% "Disagree/Strongly Disagree," indicating unanimous agreement on the benefits. Neutral responses ranged from 5–13.3%, with the highest neutrality observed in Increased Sales and Inventory Management (13.3%), possibly reflecting variability in execution or market-specific challenges. The lowest neutrality was noted in Expanded Customer Base and Higher Profit Margins (6.7%), indicating the strongest perceived benefits. The focus on Profitability and Growth is evident, as Higher Profit Margins (66.7% "Agree") suggest that e-commerce enhances efficiency and revenue. Customer Base Expansion (60% "Agree") underscores the advantages of digital reach. E-commerce is identified as a growth lever, with a recommendation for retailers to prioritize scaling online channels to access broader markets and improve margins. Operational Efficiency is supported by reduced costs (86.6% agreement) and inventory management gains, validating investments in technology-driven logistics. Customer-centricity is highlighted by enhanced engagement (86.6%), emphasizing the need for personalized digital experiences, such as chatbots and loyalty programs.

Overall Positive Impact of E-Commerce on Retailers' Business Performance:

Table 9

Overall Positive Impact of E-Commerce on Retailers' Business Performance		
Variable	Frequency	Percent
Strongly agree	20	26.7
Agree	50	66.7
Neutral	5	6.7
Disagree	0	0
Strongly Disagree	0	0
Total	75	100

(Source: Primary Data)

Observation: This table presents a summary of the aggregated sentiment of retailers concerning the impact of e-commerce on their business performance. A detailed analysis reveals the following: Key Findings Indicate Overwhelmingly Positive Perception (93.4%) A significant proportion of respondents, 26.7%, strongly agree and 66.7% agree, resulting in a combined 93.4% of retailers reporting a positive impact. This suggests a near-universal consensus on the benefits of e-commerce for their business operations. Minimal Neutral Sentiment (6.7%). Only 5 out of 75 respondents expressed neutrality, indicating that the advantages of e-commerce are evident and quantifiable for the majority of retailers. Absence of Negative Responses (0% Disagree/Strongly Disagree) No retailers disagreed with the assertion that e-commerce enhances performance, underscoring its strategic significance. E-Commerce as a Business Imperative The near-unanimous agreement (93.4%) implies that the adoption of e-commerce is essential for retailers, being critical for growth and competitiveness. Focus Areas for Maximum Impact Given that profit margins (93.4%) and customer base expansion (93.3%) were highly rated in previous data, retailers should prioritize Digital marketing (to attract more customers), Cost-efficient logistics (to protect margins), and User-friendly platforms (to retain customers). Addressing the Neutral 6.7%. These retailers may require improved tools, training, or case studies to fully capitalize on e-commerce.

Hypothesis Testing:

One Sample t-Test:

A One-Sample t-test is used when you want to test whether the mean of a single sample is significantly different from a known or hypothesized population mean. In the present study, a one-sample t-test has been

applied to check whether there is a significant difference between factors influencing retailers to adopt e-commerce and various demographic factors of retailers.

Hypothesi-1

H₀: There is no significant difference between factors influencing retailers to adopt e-commerce and various demographic factors of retailers.

H₁: There is a significant difference between factors influencing retailers to adopt e-commerce and various demographic factors of retailers.

Table 10

One-Sample Test						
	Test Value = 0					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Gender	24.583	74	0.000	1.4	1.2865	1.5135
Age Group	18.061	74	0.000	2.4	2.1352	2.6648
Educational Qualification	24.829	74	0.000	3.06667	2.8206	3.3128
Type of Business	13.819	74	0.000	2.66667	2.2822	3.0512
Gross Annual Income	27.541	74	0.000	2.73333	2.5356	2.9311
Increased Customer Demand for Online Shopping	27.203	74	0.000	2	1.8535	2.1465
User-Friendly and Easy-to-Navigate Apps	21.551	74	0.000	1.93333	1.7546	2.1121
Availability of Genuine and wide Products Range	29.684	74	0.000	2.13333	1.9901	2.2765
Competitive Pricing	25.973	74	0.000	1.86667	1.7235	2.0099
EMI Facility	23.705	74	0.000	1.8	1.6487	1.9513
Fast and Reliable Delivery	21.932	74	0.000	1.73333	1.5759	1.8908
Availability of Good Customer Service	25.973	74	0.000	1.86667	1.7235	2.0099
Good Settlement Process	21.932	74	0.000	1.73333	1.5759	1.8908
Competition from Other Online Retailers	26	74	0.000	1.73333	1.6005	1.8662
Expansion into New Markets	25.973	74	0.000	1.86667	1.7235	2.0099

(Source: Compiled by researcher)

Interpretation: Table 10 above shows that the p-value of the test at the 5% level of significance is 0.000, which is less than 0.05 in all the cases between factors influencing retailers to adopt e-commerce and various demographic factors of retailers. So, the null hypothesis is rejected, and the alternative hypothesis is accepted. Therefore, it can be concluded that there is a significant difference between factors influencing retailers to adopt e-commerce and various demographic factors of retailers.

Hypothesi-2

H₀: There is no significant difference between the impact of e-commerce on retailers' business performance and various demographic factors of retailers.

H₁: There is a significant difference between the impact of e-commerce on retailers' business performance and various demographic factors of retailers.

Table 11

One-Sample Test						
	Test Value = 0					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Gender	24.583	74	0.000	1.4	1.2865	1.5135
Age Group	18.061	74	0.000	2.4	2.1352	2.6648
Educational Qualification	24.829	74	0.000	3.06667	2.8206	3.3128
Type of Business	13.819	74	0.000	2.66667	2.2822	3.0512
Gross Annual Income	27.541	74	0.000	2.73333	2.5356	2.9311
Increased Overall Sales	23.705	74	0.000	1.8	1.6487	1.9513
Expanded Customer Base	26	74	0.000	1.73333	1.6005	1.8662
Improved Inventory Management	23.705	74	0.000	1.8	1.6487	1.9513
Reduced Operational Costs	23.705	74	0.000	1.8	1.6487	1.9513
Enhanced Customer Engagement	23.705	74	0.000	1.8	1.6487	1.9513
Higher Profit Margins	28.59	74	0.000	1.8	1.6745	1.9255

(Source: Compiled by researcher)

Interpretation: The above table displays that the p-value of the test at the 5% level of significance is 0.000, which is less than 0.05 in all the cases between the impact of e-commerce on retailers' business performance and various demographic factors of retailers. So, the null hypothesis is rejected, and the alternative hypothesis is accepted. Therefore, it can be concluded that there is a significant difference between the impact of e-commerce on retailers' business performance and various demographic factors of retailers.

Chi-Square Test: A Chi-Square Test is used to see if there's a significant association between two categorical variables or to check if the observed frequencies differ from expected frequencies. Here, the researcher has applied the chi-square test of independence, which wants to test whether two categorical variables are related or not. A Chi-Square test has been done here to check the association between overall factors influencing retailers to adopt e-commerce and the overall positive impact of e-commerce on retailers' business performance.

Hypothesis-3:

H_0 : There is no association between overall factors influencing retailers to adopt e-commerce and overall positive impact of e-commerce on retailers' business performance.

H_1 : There is an association between overall factors influencing retailers to adopt e-commerce and overall positive impact of e-commerce on retailers' business performance.

Table 12

Crosstabulation between Overall Factors Influencing Retailers to Adopt E-Commerce and Overall Positive Impact of E-Commerce on Retailers' Business Performance								
			Overall Positive Impact of E-Commerce on Retailers' Business Performance					Total
			Strongly agree	Agree	Neutral	Disagree	Strongly Disagree	
Overall Factors Influencing Retailers to Adopt E-Commerce	Most Important	Number	10	10	0	0	0	20
		% of Total	13.30%	13.30%	0.00%	0.00%	0.00%	26.70%
	Important	Number	0	35	5	0	0	40
		% of Total	0.00%	46.70%	6.70%	0.00%	0.00%	53.30%

	Neutral	Number	10	5	0	0	0	15
		% of Total	13.30%	6.70%	0.00%	0.00%	0.00%	20.00%
	Less Important	Number	0	0	0	0	0	0
		% of Total	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	Least Important	Number	0	0	0	0	0	0
		% of Total	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Total		Number	20	50	5	0	0	75
		% of Total	26.70%	66.70%	6.70%	0.00%	0.00%	100.00%

(Source: Compiled by researcher)

Table 13

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	34.063	4	0.000
Likelihood Ratio	43.534	4	0.000
Linear-by-Linear Association	0.097	1	0.755
No of Valid Cases	75		

(Source: Compiled by researcher)

Interpretation: The Pearson Chi-Square or P value of the test at the 5% level of significance is 0.000, which is less than 0.05. So, the null hypothesis is rejected, and the alternative hypothesis is accepted. Therefore, it can be concluded that there is an association between overall factors influencing retailers to adopt e-commerce and the overall positive impact of e-commerce on retailers' business performance.

From the cross tabulation, it is also found that 66.7% of respondents agree on the overall positive impact of e-commerce on retailers' business performance as a result, 53.3% of respondents take the overall factors influencing retailers to adopt e-commerce as the important factor for adoption of e-commerce by the retailers.

Findings of the Study:

The key findings of the study are shown below:

- Factors influencing the adoption of e-commerce:** It includes the speed and reliability of delivery services, as well as an efficient settlement process, which were collectively deemed most critical by 86.7% of the respondents. Additionally, the availability of an EMI facility (86.6%), competitive pressure from other online retailers (93.3%), and the presence of user-friendly applications (73.3%) were highly valued. Notably, no factors were identified as less or least important, suggesting a consensus regarding their overall significance.
- Comprehensive E-commerce adoption:** A total of 80% of retailers identified e-commerce adoption factors as either important or most important. - Specifically, 53.3% of respondents rated these factors as important, while 26.7% considered them the most important. - Notably, no factors were deemed less or least important.
- Impact on business performance:** The data indicate a predominantly positive impact, with 86.6% to 93.4% of respondents agreeing or strongly agreeing with this assessment. The primary advantages identified include an expanded customer base (93.3%) and increased profit margins (93.4%). Notably, there were no negative responses, suggesting a unanimous consensus regarding the benefits.
- Overall Impact:** A total of 93.4% of respondents indicated a positive impact, with 26.7% strongly agreeing and 66.7% agreeing. Notably, only 6.7% of responses were neutral, and there were no negative responses.
- Hypothesis testing** revealed significant differences between the e-commerce adoption factors and demographic variables. Additionally, significant differences were observed between the impact of e-commerce

and demographic variables. Furthermore, a significant association is identified between the overall adoption factors and the overall impact on business.

vi. Key implications include the following: the adoption of e-commerce is deemed essential for growth and maintaining competitiveness; retailers are advised to prioritize digital marketing, efficient logistics, and the development of user-friendly platforms; and operational excellence alongside superior user experience are identified as critical factors for achieving success.

The results demonstrate a strong consensus among retailers regarding the significant and beneficial effects of e-commerce adoption, with some variations attributable to demographic factors. The key priorities identified include rapid delivery, competitive pricing, and user-friendly platforms.

CONCLUSION

In conclusion, this study offers valuable insights into the determinants of e-commerce adoption and its impact on the business performance of retailers in Darjeeling. The findings indicate a strong consensus among retailers regarding the significance of e-commerce, with factors such as rapid delivery, efficient settlement processes, and user-friendly applications being pivotal drivers of adoption. The overwhelmingly positive impact on business performance, particularly in terms of expanding customer base and increasing profit margins, underscores the strategic importance of e-commerce for retailers. The study also highlights significant associations between adoption factors, business impact, and demographic variables, suggesting that e-commerce strategies should be tailored to specific retailer profiles. The absence of negative perceptions further emphasizes the perceived necessity of e-commerce in the contemporary retail landscape. These results have important implications for retailers, suggesting they should prioritize operational excellence, enhance user experience, and focus on digital marketing to maximize the benefits of e-commerce. As the retail sector continues to evolve, embracing e-commerce appears to be not only beneficial but essential for growth and competitiveness in the Darjeeling market. Future research could explore the long-term sustainability of e-commerce adoption in Darjeeling, considering potential challenges such as infrastructure limitations or changing consumer preferences. Additionally, comparative studies with other regions could provide broader insights into the generalizability of these findings. Policymakers and business leaders should consider these results when developing strategies to support and promote e-commerce adoption among retailers in similar markets.

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