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Investigating Customer Behaviour in the Digital Age: An Empirical Analysis of Online Buying Trends

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Abstract

This research examines customer behavior during the digital era using an empirical investigation of online purchasing patterns. From a study of secondary data equating to 100 cases of online purchases, the study identifies central features including preferred product categories, preferred devices used for shopping, frequency of purchase, and busiest shopping times. The research discovers that Electronics and Fashion are the leading online purchase items, with the smartphone proved to be the most frequently used device. This study notes that regular customers make up the bulk of customers and that customer activity is at its highest during festive and holiday seasons. With these observations, companies can get specific guidance on adjusting their online strategies to keep up. The study confirms that aligning with new consumer trends increases a company's chances of succeeding in the growing online market.

Keywords; Customer Behavior, Online Buying Trends, E-commerce, Digital Shopping, Consumer Preferences, Purchase Frequency.

INTRODUCTION

In the present age of technology, the internet has greatly changed how consumers deal with and select products to buy. Through e-commerce sites, mobile gadgets and digital currency, shoppers can now enjoy their experiences quicker, more easily and tailored to their preferences. Now, companies face challenges and new opportunities to keep up with what consumers are interested in and how they act online.

Background of the Study

Developments in digital technology and a broad reach of the internet have led to different consumer habits when working with businesses. Online shopping has taken over as the main retail trend, changing how people shop in recent years. Thanks to the internet, consumers can view products, services and reviews in real-time and thus make more informed and easier decisions. Thanks to smartphones, secure ways to pay, new recommendation systems based on AI and instant support, using e-commerce is now simpler and more accessible.

The change in technology platforms leads to changes in how people shop. More and more, things like personalized content, social media, digital ads and user-generated content are part of the decision-making process for purchases. Because of the COVID-19 pandemic, more people shifted towards online shopping which led even the most reluctant consumers to deal with online payment options. Thanks to the digital change, people now consider different aspects of their purchases such as items, quantities, devices used and specific times.

It is important for companies to understand the factors that influence how people act online to remain relevant and ahead in today's market. Having knowledge about their trends and what influences them helps e-commerce sites, advertisers and product developers to design better strategies that keep customers engaged and coming back.

Objectives of the Study

This research seeks to examine customer conduct in the context of e-commerce, empirically analysing patterns and future trends in online purchasing. The precise goals are:

1. To identify the most popular product categories purchased online in the digital age.
2. To analyse the preferred digital devices used by consumers for online shopping.
3. To examine the frequency of online purchases across different types of consumers.
4. To explore peak shopping periods and seasonal influences on online buying behavior.
5. To derive insights that can help e-commerce platforms and marketers align with evolving customer expectations and digital habits.

LITERATURE REVIEW

Godwin (2019) conducted an empirical investigation to understand how digital marketing alters the purchase behavior of consumers. In Nigeria, researchers at Ahmadu Bello University studied whether digital marketing impacted the buying behavior of people in the modern market. Godwin found that digital marketing affected consumers by increasing their knowledge, encouraging them to take action and changing their buying choices. It was observed that social networks, emails and online ads are increasingly shaping the way consumers make buying decisions. People were going online more to find information and advice about products, resulting in a shift from traditional to personalized and interactive marketing use..

Halttunen (2016) looked closely at people's habits of consuming digital music. In the Jyväskylä studies of computing, Halttunen examined studies on the changes in how people accessed and obtained music due to digital technology. The paper discussed various things that influenced how we use digital services such as being accessible, convenient and having digital services available. It turned out that fans started using digital media more, since it was easier to access and let them build their music preferences as they liked. The study also explored earlier research results, pointing out how consumer behavior quickly changes when the digital age arrives and how this affects companies in digital content industries.

Bashir, Mehboob, and Bhatti (2015) researched internet purchase habits in Pakistan to learn how they impact consumer spending. JMR found that the use of e-commerce websites by Pakistani buyers is increasing and those factors such as trust, convenience, price and the variety of products matter in shaping internet buying habits. Shopping over the

internet was found to be something consumers welcomed more, especially when they felt it was easy and saved them time, but they were still hesitant about paying and trusting product quality. The analysis found that most consumers slowly started adopting online shopping due to better technology and growing internet use.

Saura et al. (2020) looked into consumer attitudes in the digital age by using a study from the Journal of Spatial and Organizational Dynamics. The authors studied how digital advances affected how consumers interact with and make decisions in different industries. They identified three key trends: rising popularity of social networks, more mobile commerce and the influence of targeted advertising on people's purchases. According to their studies, digital consumers preferred a seamless experience across all channels, immediate access to product info and the ability to speak with brands directly. The research also found that digital trends pushed organizations to modify their marketing and operational plans to meet customer needs and rely on big data to predict and fulfill demands.

METHODOLOGY

Handling customer behaviour in the age of the internet calls for systematic data collection and examination. In this research, we look at online purchasing trends using data to study major behaviours like preferences for products, types of devices used, how often someone purchases and patterns based on seasons. It is based on examining secondary information to give a clear and detailed picture of how consumers behave in the online marketplace.

Research Design

This research employs a quantitative empirical research design to explore customer behavior during the digital era through an examination of online purchasing trends. The method emphasizes the gathering and analysis of numerical data to shed light on patterns of product choice, device preference, frequency of purchase, and top shopping times.

Data Source

The data that have been analyzed in this research are secondary in nature, obtained from credible industry reports, e-commerce market analyses, and digital consumer behavior studies made public by established market intelligence companies and research institutions. It enables an overall and realistic observation of consumer online purchasing behavior without depending on primary survey data.

Sample Size

The sample comprises a normalized 100 instances of online purchases or customer transactions, which represent a cross-

section of the online shopping phenomenon. The sample size has been chosen such that it will give a clear, proportional picture of different facets of consumer behavior without being data-intensive in presentation and analysis.

Variables and Measures

The research concentrates on a number of important variables in order to observe the online purchasing behavior in detail. The research checks the category-wise online spending in terms of product groups like Electronics, Fashion & Apparel, Groceries & FMCG, Home & Furniture, Beauty & Personal Care, Books & Stationery, and other miscellaneous products. Furthermore, the study also checks the shopping device used by consumers, e.g., Smartphones, Laptops/Desktops, Tablets, and Smart TVs or other gadgets. The second important variable that is taken into consideration is online purchase frequency, divided into Frequent Buyers (weekly), Regular Buyers (monthly), Occasional Buyers, and Rare Buyers. Lastly, the research delves into peak months for online shopping by examining purchase distribution by months, with keen focus on seasonal and festival-driven shopping patterns.

Data Analysis Techniques

The secondary data collected were tabulated in frequency distributions and transformed into percentages to present relative trends between categories. Descriptive statistical techniques are used in the study to summarize and interpret the data, making it easier to understand customer behavior patterns in online shopping empirically. The findings are reported in four frequency-percentage tables, which are the main analytical instrument to explore: Product category preferences of consumers, Device usage pattern for accessing online retail websites, Segmentation of buying frequency among customers, Online shopping activity seasonal peak.

Limitations

Although the secondary data offer an exhaustive presentation of internet purchasing patterns, the research recognizes limitations because there is no primary data gathering like surveys or interviews. Consequently, individual consumer drives and demographics are not examined in this analysis.

DATA ANALYSIS

With the fast-paced changing digital market, it has become necessary for companies to understand consumer behavior in order to remain competitive and consumer-oriented. With the boom in e-commerce, customer shopping habits have changed significantly, with people preferring online platforms for ease, choice, and affordability. This research

investigates major trends in online consumer purchase behavior through examination of variables like product category choice, usage of devices, frequency of purchase, and during which periods purchases are made. The statistics reflect dramatic changes in consumer behavior, with fashion and electronics being key product picks, smartphones being the most popular device for shopping, and observable peaks in purchases on festive and holiday periods.

Table 1 Distribution of Online Purchases by Product Category

Product Category	Frequency	Percentage (%)
Electronics	26	26%
Fashion & Apparel	22	22%
Groceries & FMCG	19	19%
Home & Furniture	11	11%
Beauty & Personal Care	10	10%
Books & Stationery	5	5%
Others	7	7%
Total	100	100%



Figure 1 Graphical presentation of Distribution of Online Purchases by Product Category

Table 1 reveals that fashion & apparel (22%) and electronics (26%) are the most widely bought product categories online, suggesting high consumer demand for technology goods and clothing. Groceries & FMCG are next at 19%, showing increased demand for convenience in day-to-day shopping. Home & furniture (11%) and beauty & personal care (10%) have average engagement levels, while books & stationery (5%) and other products (7%) have lower rates of online buying. The data overall points to electronics and fashion as top categories in online consumer behavior.

Table 2 Preferred Devices for Online Shopping

Device Type	Frequency	Percentage (%)
Smartphones	78	78%
Laptops/Desktops	17	17%
Tablets	3	3%
Smart TVs & Others	2	2%
Total	100	100%

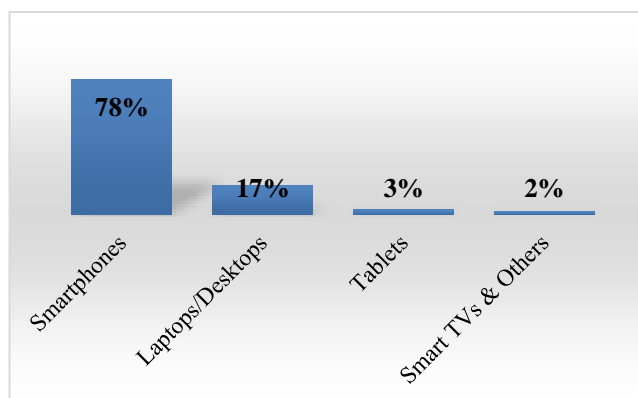


Figure 2 Graphical presentation of Preferred Devices for Online Shopping

Table 2 shows that smartphones are the leading device for online shopping, utilized by 78% of consumers. This is an indication of increased accessibility, convenience, and mobile-friendly interfaces of e-commerce sites. Laptops/desktops are next at 17%, demonstrating enduring viability as consumers might prefer larger screens for in-depth browsing. Tablets (3%) and smart TVs/others (2%) have a negligible market share, indicating limited use of these devices to make online purchases. In total, smartphones have become the key driving digital shopping behavior.

Table 3 Online Buying Frequency by Customer Type

Buying Frequency	Frequency	Percentage (%)
Frequent Buyers (Weekly)	20	20%
Regular Buyers (Monthly)	38	38%
Occasional Buyers	30	30%
Rare Buyers	12	12%
Total	100	100%

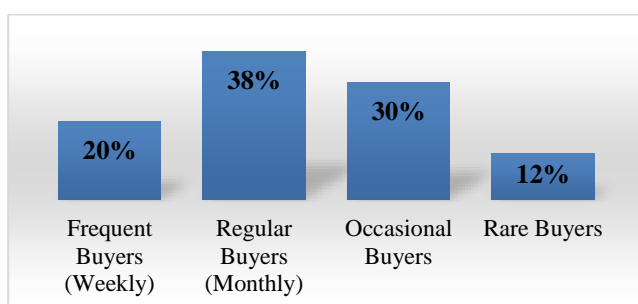


Figure 3 Graphical presentation of Online Buying Frequency by Customer Type

Table 3 indicates that frequent buyers, who shop online every month, are the largest percentage at 38%, followed by occasional buyers at 30%. Frequent buyers on a weekly basis

are 20%, reflecting a large group of heavily invested online shoppers. Rare buyers are the remaining 12%, reflecting that fewer users invest a minimal amount into online shopping. Overall, most consumers shop online on a monthly or occasional basis, indicating stable but fluctuating levels of digital buying behavior engagement.

Table 4 Peak Online Shopping Periods by Month

Month	Frequency	Percentage (%)
November (Festive)	18	18%
December (Holiday)	15	15%
July (Mid-Year)	13	13%
October	11	11%
January	9	9%
Other Months	34	34%
Total	100	100%

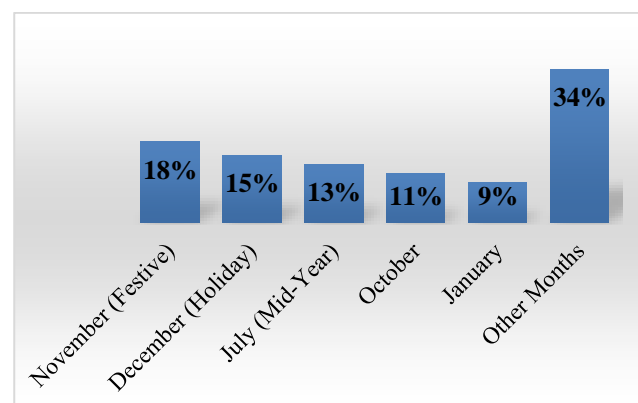


Figure 4 Graphical presentation of Peak Online Shopping Periods by Month

Table 4 discloses that November (18%) and December (15%) are the busiest months for online buying, possibly because of festival offers and Christmas promotions. July (13%) and October (11%) register considerable activity as well, reflecting mid-year and pre-festival buying. January registers 9%, reflecting post-holiday purchases. Yet, 34% of buying takes place in other months, which implies that although seasonality spikes occur, online purchasing is active throughout the year through convenience and constant promotions.

CONCLUSION

This research sheds new light on customer trends in the online era through empirical observation of online consumption patterns. The results indicate well-defined preferences in product segments, with Electronics and Fashion among the foremost products purchased by

consumers, as well as the supremacy of smartphones as the device of choice for online shopping. Moreover, the research determines varying frequencies of purchases, indicating a considerable segment of consumers as routine monthly buyers, along with highlighting strong seasonal spikes during festive and holiday seasons. These findings highlight the changing dynamics of online consumer behavior and provide operational implications for e-commerce companies in an effort to maximize their marketing efforts, refine user experience, and align with consumers' interests in a competitive internet retailing space. Future studies would be able to build on this base by adding primary data and discussing demographic and psychological drivers of online buying decisions.

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