A Study on Consumer Buying Behaviour Towards The Online Grocery App's

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Abstract- *The rapid growth of e-commerce and increasing internet penetration have led to a significant shift in consumer shopping habits, with a notable rise in online grocery shopping. The research was conducted to understand the key drivers and challenges that shape a consumer's decision-making process when purchasing groceries through digital platforms. The findings revealed that convenience and time-saving are the most significant motivators for consumers to switch to online grocery shopping. The availability of a wide range of products and attractive discounts also play a crucial role in influencing purchase decisions However, concerns regarding the quality and freshness of perishable goods and a lack of trust in the selection process were identified as major barriers. The study also found that demographic factors such as age and occupation have a considerable impact on the frequency of online grocery app usage. This research provides valuable insights for online grocery app companies to develop effective marketing strategies, improve service quality, and address consumer concerns to build trust and loyalty*

Keywords- PCB Defect Detection, YOLOv8, Deep Learning, Real-Time Inspection, Computer Vision, Flask Web Application, Automated Optical Inspection (AOI), Surface Defect Classification, Industrial Automation, Smart Manufacturing.

I. INTRODUCTION

The online grocery market in India, in particular, has witnessed exponential growth, with major players like BigBasket, Grofers, Amazon Fresh, and newer quick-commerce startups like Zeptoand Blinkit competing fiercely for market share .The retail landscape has undergone a dramatic transformation in recent years, largely driven by the pervasive growth of e-commerce and the increasing digital connectivity of consumers. While traditional brick-and-mortar stores have long dominated the grocery sector, the emergence of online grocery apps has introduced a new and convenient alternative for shoppers. This shift has been accelerated by modern lifestyles characterized by busy schedules, urbanization, and a growingpreference for time-saving solutions The need for social distancing and contactless shopping instilled a new habit in consumers, pushing them towards digital platforms for their daily essentials. This shift has led to a burgeoning market with numerous players, from established e-commerce giants to specialized start-ups, all buying for a share of this growing pie. The study will explore various aspects, including the perceived benefits such as convenience and time-saving, as well as the challenges and risks, such as concerns about product quality, delivery issues, and user trust.

OBJECTIVES

- To analyse the factors influencing consumer preference towards online grocery shopping
- To examine consumer buying behaviour patterns such as frequency of purchase average spending and product categories most purchased online.
- To assess the role of promotion offers discounts and advertisement in influencing consumer buying behaviour

STATEMENT OF PROBLEM

The rapid growth of Instagram as a marketing Platform has significantly transformed how brands interact with youth consumers. However, a critical Problem arises in understanding how Instagram's Visually driven content influences the perceptions and emotional connections that young users form with the brands. while these visual posts con enhance brand recognition and appeal, it remains unclear how deeply they shape Youth buying behavior and Loyalty. Furthermore, there is a lack of clarity on how the Instagram marketing impacts individuals and youths differently across diverse locations and the Cultural backgrounds. The platform's global reach means that marketing strategies that resonate in one cultural context may not be effective in another leading to the inconsistencies in engagement and youth response. It poses a significant challenge for marketers trying to craft universally effective Instagram campaigns while respecting regional and cultural sensitivities

LIMITATIONS OF THE STUDY

- The study may be limited to a specific city or region where a particular app is popular. The findings may not be generalizable to other areas with different demographics, internet penetration, or cultural habits
- The research may inadvertently focus on a particular demographic, such as young, urban, tech-savvy professionals, and may not fully capture the behaviors of other groups, like older adults or those in rural areas.
- Online grocery shopping is fundamentally different from in-store shopping. The study may struggle to fully account for the sensory experience of in-store shopping, such as the ability to see, touch, or smell fresh produce, which is a key driver for many consumers.
- A study centered on a single app might not reflect general consumer behavior across the entire online grocery market. The user experience, interface design, and features of a specific app can heavily influence a consumer's behavior.

II. REVIEW OF LITERATURE

Salamzadeh, A., Ebrahimi, P., Soleimani, M., & Fekete-Farkas, M. (2022). A study comparing grocery apps in Hungary and Iran used Gaussian Mixture Model (GMM) for clustering and Multi-Layer Perceptron (MLP) for prediction. Results showed **Wolt** as most popular in Hungary and

Snappfood in Iran, with GMM achieving up to 96% accuracy and MLP showing minimal error (MSE < 0.1). The research emphasizes demographic segmentation and customization in understanding consumer behavior.

Akhtar, M. A., & Farooqi, M. R. (2022). Studies note a shift in India from offline to app-based grocery shopping, driven by technology, convenience, and COVID-19. Factors such as time savings, pricing, and variety strongly influence this change.

Van Droogenbroeck, E., & Van Hove, L. (2017). A comparative analysis of grocery apps in Hungary and Iran applied GMM for clustering and MLP for prediction. The findings identified Wolt and Snappfood as the leading apps, with high model accuracy and low error rates, highlighting the importance of demographics and market segmentation in consumer behavior.

Kim, H. (2024). Studies show that uses and gratifications strongly influence user attachment and experience with grocery apps, while innovation factors mainly affect attachment. Users also perceive these apps as more simple, beneficial, and engaging than non-users.

Shukla, A., & Sharma, S. K. (2018). Using TAM, research found Indian consumers accept mobile apps for shopping, but adoption in groceries is limited, suggesting factors beyond technology influence usage**.**

III. RESEARCH METHODOLOGY

Research Design :

The study follows a descriptive research design to explore the A Study on conusumer buying behaviour towards the online grocery apps

Sampling Technique

A random sampling technique was used to select respondents for the study.

Sampling Size

The study included a total of 113 respondents from different demographic groups.

Sampling Tools

Structured questionnaires and survey forms were used as the primary tools for data collection. The collected data were analyzed using percentage analysis to interpret the responses and identify trends in consumer behavior related to online grocery apps

Area of the Study

The research was conducted in Overall, Coimbatore city.

Period of the Study

The study was carried out over a period of one months.

Data Collection

Data collection involves gathering information or observations from various sources such as surveys, interviews, or observations. This process is crucial for obtaining empirical evidence to support research objectives and analyze trends or patterns.

Methods of Data Collection

Primary Data

Primary data is firsthand information collected directly by the researcher using tools such as surveys and questionnaires. Responses from consumers regarding online grocery apps in Tamil Nadu .

Secondary Data

Secondary data is information collected previously by other sources and is available in published formats. The secondary data collected for the study from various Journals, magazines, books, newspapers, reports, and online articles.

Percentage Analysis :

TABLE 1 :

Variable	Response	Respondents	Percentage
Age	10 -20	60	53.1%
	21 -30	42	37.2%
	31 -40	6	5.3%
	41 and above	5	4.4%
No of members in the family	2-4	74	65.5%
	4-6	30	26.5%
	6 and above	9	8%
Profession	Student	76	67.3%
	Business	9	8%
	Employee	21	18.6%
	Home Maker	7	6.2%

INTERPRETATION

The table shows that most respondents are young (10–30 years), belong to small families with 2–4 members, and are predominantly students, indicating the study mainly reflects the views of a youthful student population with limited representation from other groups**.**

TABLE 2 :

Variable	Response	Respondents	Percentage
Online grocery apps	Big Baskert	15	13.3%
	Jio Mart	10	8.8%
	Zepto	23	20.4%
	Flipkart	28	24.8%
	Amazon	12	10.6%
	Fresh		
	Others	25	22.1
Purchase Convenience	Convenience of Shopping anytime	43	38.1%
	Wide variety of product	19	16.8%
	Home delivery	42	37.2%
	Competitive pricing	9	8%
Preference	Ease of use (app design& navigation)	25	22.1%
	Delivery speed & accuracy	49	43.4%
	Product Availability & quality	31	27.4%
	Returns / refund Policies	8	7.1%
Challenges	Late Delivery	27	23.9%
	Poor Product quality	27	23.9%
	Apps Crashes /Technical issues	32	28.3%
	Lack of Desired Product	27	23.9%

INTERPRETATION

The table shows that Flipkart and Zepto are the most preferred grocery apps, with convenience and home delivery as the main reasons for usage. Customers value delivery speed, accuracy, and product quality over price, while common challenges include app crashes, late delivery, poor product quality, and unavailability of desired products**.**

TABLE 3 :

Variable	Response	Respondents	Percentage
Frequency of purchase	Daily	11	9.7%
	Weekly	27	23.9%
	Monthly	39	34.5%
	Rarely	36	31.9%
Average spend per order	Less than 500	44	38.9%
	500 -1000	35	31%
	1000 - 2000	21	18.6%
	More than 2000	13	11.5 %
Most purchased category	Fruits & Vegetable	21	18.6%
	Packaged foods & Snacks	41	36.3%
	House hold essentials	39	34.5%
	Daily & Beverages	12	10.6%
Order style	Always plan in advance	23	20.4%
	Sometimes plan ,Sometime Spontaneous	50	44.2%
	Mostly Spontaneous	22	19.5
	Never plan	18	15.9%

INTERPRETATION

Most respondents tend to shop either monthly (34.5%) or rarely (31.9%), with very few making daily purchases (9.7%). In terms of spending habits, the majority spend under ₹500 per order (38.9%), while only a small portion (11.5%) spend more than ₹2000. When it comes to product preferences, packaged foods and snacks (36.3%) along with household essentials (34.5%) are the most commonly purchased categories. Regarding order style, 44.2% of consumers sometimes plan their purchases, whereas 19.5% shop mostly on a spontaneous basis.

TABLE 4 :

Variable	Response	Respondents	Percentage
Frequeny of purchase	Only 1	22	19.5
	2 Apps	49	43.4%
	3 or more apps	25	22.1%
	None regularly	17	15%
Purchase frequency	Always	19	16.8%
	Often	24	21.2%
	Sometimes	49	43.4%
	Rarely	12	10.6%
	Never	9	8%
Promotions	Discounts & cashback	41	36.3%
	Buy 1 get 1 free	43	38.1%
	Free delivery offers	21	18.6%
	Loyalty rewards / points	8	7.1%
Preference of purchase	Discounts are much more important	26	23%
	Discounts slightly more important	25	22.1%
	Both equally important	40	35.4%
	Product quality more important	22	19.5%

INTERPRETATION

Most respondents use two apps (43.4%) and engage with them casually, mainly "sometimes" (43.4%). Direct offers like Buy 1 Get 1 (38.1%) and cashback (36.3%) are most attractive, while loyalty rewards are least valued (7.1%). In choosing between quality and discounts, many balance both (35.4%), though discounts are overall prioritized more than product quality.

IV. FINDINGS OF THE STUDY

- Majority of the respondents reported using two grocery apps (43.4%) and engaging with them only casually (43.4%).
- Majority of the respondents preferred Flipkart and Zeppa as their grocery apps, followed by Big Basket and Amazon Fresh.
- Majority of the respondents were students (87.3%), predominantly belonging to the 10–20 years age group

(53.1%), and living in small families of 2–4 members (65.5%).

- Majority of the respondents purchased groceries on a monthly basis (31.9%), followed by weekly purchases (23.9%), while daily purchases (9.7%) were least common.
- Majority of the respondents spent between ₹500–₹1000 (31.8%), followed by ₹1000–₹2000 (23.8%), while only a small proportion (11.5%) spent above ₹2000.
- Majority of the respondents frequently purchased fruits and vegetables (36.6%) and household essentials (34.5%), while beverages were the least purchased category.
- Majority of the respondents were most attracted to direct offers such as Buy 1 Get 1 (38.1%) and cashback (36.3%).
- Majority of the respondents considered loyalty rewards (7.1%) as the least valued promotional strategy.
- Majority of the respondents (35.4%) valued both quality and discounts equally, though overall, discounts were prioritized more than product quality.
- Majority of the respondents highlighted delivery speed and accuracy (43.4%) and home delivery (37.2%) as the key drivers, followed by competitive pricing (22.1%).
- Majority of the respondents also valued wide product variety (16.8%) and ease of navigation (19.5%) as supportive factors.
- Majority of the respondents faced app crashes and glitches (28.3%) as the biggest issue in grocery app usage.
- Majority of the respondents also reported product unavailability (27.4%), late delivery (23.9%), and high delivery charges (23.9%) as major challenges.
- Majority of the respondents considered returns and refunds (7.1%) as the least problematic concern.

V. SUGGESTION

Online grocery apps should improve delivery speed, app stability, and product availability, while offering direct promotions like BOGO and cashback to attract the largely student user base. Balancing quality with discounts, ensuring affordable pricing, and reducing delivery charges will help increase satisfaction and loyalty**.**

VI. CONCLUSION

The study clearly highlights that the growth and sustainability of online grocery apps lie in their ability to align with the evolving expectations of consumers, especially the youth-driven market dominated by students. Customers primarily seek speed, convenience, and reliability, and hence, improving delivery accuracy and timeliness should be a top priority. Addressing persistent challenges such as app glitches, product unavailability, and high delivery charges will further strengthen user confidence and encourage repeated usage. At the same time, attractive and straightforward promotional strategies like Buy One Get One offers and cashback schemes remain essential to capture the attention of price-sensitive young buyers, whereas less-valued loyalty rewards should be given lower emphasis. However, while discounts are a strong driver, the importance of maintaining product quality cannot be overlooked, as users expect freshness and reliability alongside affordability.

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