Understanding Various Influential Factors Affecting Selection of Online Grocery Retailer in Respect to Kolkata Metropolitan Area

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Abstract

The research had sought to discover and compare some of the key factors determining consumer choice of online grocery stores among current market participants. Descriptive and comparative research design had been utilized, applying purposive sampling to receive feedback from 300 seasoned online grocery shoppers. Information had been gathered using structured questionnaires and secondary sources, including factors like price, delivery speed, product variety and quality, platform usability, customer service, promotional offers, and brand reputation. The results had shown that delivery speed, platform usability, product variety and brand reputation had been the most significant determinants of consumer choice, while price and promotional offers also remained vital for price-sensitive segments. Among the platforms studied, Amazon Fresh had dominated in most of the key domains, trailed by Swiggy Instamart, with Zepto and Bigbasket posting moderate ratings. The research had established that online grocery stores must provide competitive pricing, effective delivery, high usability, and high brand trust as a bundle to increase customer loyalty as well as market competitiveness.

Keywords: Online Grocery Shopping, Consumer Behavior, Influential Factors, Comparative Analysis, Amazon Fresh, Swiggy Instamart, Zepto, Blinkit, Big basket, Flipkart Minutes, Delivery Speed, Platform Usability, Brand Reputation.

1. INTRODUCTION

The expansion of online grocery shopping has dramatically altered consumer behavior in recent years, with an increasing number of consumers choosing the ease and versatility that online stores provide. With the rise in demand for grocery services online, particularly during the COVID-19 pandemic, it became important for retailers and researchers alike to understand the different factors that affect consumer choice of online grocery stores. Not all online grocery platforms are created equal and consumers weigh several factors when deciding which platform to use. These includes things like pricing strategy, delivery efficiency, range of products, usability of the platform, and quality of customer service, right through to promotional offers and brand reputation.

Existing research has emphasized that although price is still a dominant driver, other factors like delivery speed, simplicity of use, and product quality also have an impact on the purchasing behavior of consumers. Additionally, demographic considerations such as age, income, and household size have been demonstrated to contribute to online grocery shopping behavior. Retailers thus must be aware of these varied influence factors in order to effectively target different consumer segments.

This research sought to investigate and examine these determinant factors, undertaking a comparative review of top online grocery stores, such as Amazon Fresh, Swiggy Instamart, Zepto, Bigbasket, Blinkit, Flipkart Minutes. The overall goal was to determine the most important factors that influence consumer decision-making, and to evaluate how these factors differ across platforms. Through knowing these dynamics, online grocery stores can make their products more optimum to meet the changing demands of consumers and be competitive in the market.

2. LITERATURE REVIEW

de Magalhães (2021) had examined key drivers of the ultimate decision-making process for online grocery shopping, identifying aspects like price sensitivity, product availability, delivery choice, and usability of the platform as key to consumer choice. The research had stressed that consumer decisions were not based on price alone, but on a mix of convenience, speed of

delivery, and product range. Therefore, it had been essential for retailers to harmonize these factors with consumer desire in order to stay competitive.

Dominici et al. (2021) had investigated the socio-demographic and situational determinants of online food buying. Their studies had shown that age, income, and household size had all been important in determining consumer behavior. Younger consumers and consumers in higher-income households had been more likely to embrace online shopping for groceries, mainly because they were more comfortable with digital interfaces and could pay for delivery charges. The research had also emphasized how crucial it was to comprehend these demographic groups, for they had been pivotal in formulating marketing strategies successfully for various segments.

Erjavec and Manfreda (2022) had extended the Unified Theory of Acceptance and Use of Technology (UTAUT) model by integrating herd behavior. The study had demonstrated how social isolation and pressure from others had led to accelerated online shopping adoption during the pandemic. The study had indicated that the pandemic had altered the behaviors of consumers, with most people going online to shop for groceries as a result of safety issues, social influence, and convenience. These contextual elements had rendered online spaces more appealing, especially since brick-and-mortar stores had become less accessible, highlighting the increasing dominance of social influence in consumer decision-making.

Fernandes et al. (2021) had created a scale to quantify the determinants of online consumers' purchasing decisions. Their studies had been aimed at determining the psychological and emotional factors that drive online purchasing decisions. The research had established that trust, ease of use, and a good user experience had been key determinants in developing consumer loyalty towards online platforms. Their studies had indicated the growing significance of platform usability, customer support, and secure payment in developing consumer satisfaction and retention.

3. RESEARCH METHODOLOGY

3.1. Research Design

The research had taken a descriptive and statistical research design. This had been done to systematically analyze and compare the factors that had an impact on the choice of online grocery platforms. A quantitative research approach had been used to ensure objectivity and to allow the findings to be generalized to a wider consumer population.

3.2. Sampling Technique

A purposive sampling method had been used in this study. Respondents who already had experience with online grocery shopping had been selected purposely. The sample consisted of 300 participants from Kolkata metropolitan area who had been diversified according to age, gender, occupation in order to have a wide and representative distribution.

3.3. Data Collection Methods

Primary data had been gathered using structured online questionnaires. These questionnaires had been sent out through email and social media websites in order to access a diverse group of people. The questionnaire had included both closed-ended and Likert scale-based questions to best reflect the relative importance of different factors affecting the selection of online grocery stores. Along with primary data, secondary data had been collected from company reports, industry journals, and past research studies to further enrich and complement the analysis.

3.4. Variables Included

The research had found some independent variables that affected the choice of online grocery websites. They were pricing strategy, delivery speed, range and quality of products, ease of use of website or application, quality of customer service, quality of products and value for money, promotional discounts and loyalty schemes, and reputation of the brand. The dependent variable of the research had been the customer's selection of an online grocery website.

3.5. Data Analysis Method

The data that was gathered had been sorted and studied to look for patterns and trends in the affecting factors. Comparison had been conducted among leading companies in the grocery market online, including Amazon Fresh, Swiggy Instamart, Blinkit, Bigbasket, Zepto, Flipkart Minutes. The comparison was meant to ascertain which factors had been most effective for each site based on the preferences of customers.

3.6. Ethical Considerations

The study had adhered to ethical standards to provide protection to participants. Confidentiality of information from respondents had been ensured, and informed consent had been secured before participation. Participants had been informed in a transparent manner about the objective of the study, and their participation had been fully voluntary.

4. RESULT AND DISCUSSION

Analysis of the gathered data had shed crucial light on determining factors behind consumer choice in regard to online grocery stores. Comparing key competitors in the marketplace, the study had singled out determinants driving customer desire and satisfaction rates. This section represented the results orderly and discussed them in context to prevailing theory and practical ramifications.

4.1. Demographic Profile of Respondents

The demographic profile of the respondents revealed a relatively even gender split, with the number of male participants significantly Lower than that of females. Aged-wise, the largest segment was found in the middle range.

Table 1: Demographic Characteristics of Respondents

Variable	Categories	Frequency	Percentage (%)
Gender	Male	40	13%
	Female	260	87%
Age	30-40	270	90%
	40-50	20	7%
	50 and above	10	3%
Monthly Income	Below Rs 70000	23	8%
	Rs70000-Rs 100000	160	53%
	Above Rs 100000	117	39%

Figure 1: Demographic Profile

Sample Size: 300 respondents

Gender Distribution

The sample is overwhelmingly female, indicating a strong gender skew. This suggests that women are the primary respondents (and likely primary decision-makers or users) in the context of online grocery shopping in this dataset.

Age Distribution

The vast majority of respondents are aged 30–40, highlighting that online grocery shopping is most popular among late 30 adults. Older adults are significantly underrepresented.

Monthly Income Distribution

Most respondents (53%) belong to Rs 70000-Rs 100000, with 39% belong to >Rs 1,00,000. The lower-income segment is much less represented.

Overall Statistical Insights

The respondent pool is predominantly female, late thirty (30–40), and middle- to high-income. This demographic skew suggests that findings and preferences from this survey are most applicable to metropolitan, working-age women with moderate to high purchasing power. Any conclusions about online grocery shopping behaviour from this dataset should be interpreted

in light of these demographic concentrations, as they may not generalize to older, male, or lower-income populations.

4.2. Comparative Analysis of Influential Factors

Mean scores for different key factors across several online grocery websites had been determined. Table 2 presented the results.

Table 2: Mean Scores of Influential Factors Across Online Grocery Platforms

Attribute	Mean	Std Dev	Median	25th Percentile	75th Percentile	Min	Max
Price	3.32	1.22	3	2.75	4	1	5
Delivery Speed	3.62	1.53	4	2.75	5	1	5
Product Variety	3.49	1.26	4	2.75	4.25	1	5
Delivery Quality	3.5	1.43	4	2	5	1	5
Platform Usability	3.55	1.44	4	3	5	1	5
Customer Service	3.33	1.54	4	2	5	1	5
Promotional Offers	3.12	1.29	3	2	4	1	5
Brand Reputation	3.43	1.36	4	2	5	1	5

(Scale: 1 = Very Poor, 5 = Excellent)

Table 3: Attribute Rating

Attribute	Mean Score	Most Common Score (Median)
Price	3.32	3
Delivery Speed	3.62	4
Product Variety	3.49	4
Delivery Quality	3.5	4
Platform Usability	3.55	4
Customer Service	3.33	4
Promotional Offers	3.12	3
Brand Reputation	3.43	4

Table 4: Attribute Importance

Attribute	Mean Rating	Statistically Significant?	User Comments Frequency
Delivery Speed	3.62	Yes (vs. Offers)	Very High
Product Variety	3.49	No	High
Platform Usability	3.55	No	Moderate
Price	3.32	No	High
Delivery Quality	3.5	No	Moderate
Customer Service	3.33	No	Moderate
Promotional Offers	3.12	No (lower)	Moderate
Brand Reputation	3.43	No	Moderate

Interpretation:

The most critical factor for users in this is **delivery speed**, both by direct ratings and statistical comparison. **Product variety, platform usability, and price** are also important, but not statistically distinct from each other. **Promotional offers** are valued less compared to operational factors like speed and reliability. This suggests that users prioritize efficient, reliable service and a wide selection over discounts or brand image.

Pairwise t-tests

The pairwise t-tests comparing attribute ratings across platforms revealed **one statistically significant difference** at the $\alpha = 0.05$ level:

Significant Pair

Attribute 1	Attribute 2	t-statistic	p-value
Delivery Speed	Promotional Offers	2.18	0.0309

This indicates respondents rated **delivery speed** significantly higher than **promotional offers** ($\bar{x}_{delivery}=3.62$ vs. $\bar{x}_{offers}=3.12$).

Borderline Significant Pair

Attribute 1	Attribute 2	t-statistic	p-value
Platform Usability	Promotional Offers	1.96	0.0514

This neared significance ($p=0.051$), suggesting a weak trend toward higher ratings for usability compared to promotional offers.

Key Observations

1. **28 attribute pairs were tested**, with only 1 showing significance at $\alpha=0.05$.
2. **No other pairs** showed meaningful differences ($p>0.05$ for all others).
3. After applying a **Bonferroni correction** for multiple comparisons ($\alpha_{adjusted}=0.05/28\approx0.0018$), **no pairs remain significant**.

Interpretation:

- The single significant difference aligns with earlier descriptive statistics showing delivery speed as a stronger perceived strength than promotional offers.

4.3.   Key Findings

1. Delivery Speed

- Delivery speed consistently receives the highest average ratings among all attributes (mean ≈ 3.62).
- It is the only attribute that shows a statistically significant difference when compared with promotional offers in pairwise t-tests, indicating users value fast delivery more than discounts or offers.

2. Product Variety and Platform Usability

- Both attributes receive relatively high average scores (means ≈ 3.49 and 3.55, respectively).
- While not statistically distinct from other attributes at strict significance levels, they are frequently mentioned as important in open-ended responses and are rated highly.

3. Price

- Price is among the top-rated factors (mean ≈ 3.32).
- Many users list "Price" as a key reason for their platform preference, indicating cost sensitivity remains important.

4. Delivery Quality and Customer Service

- These attributes have moderate average ratings (means ≈ 3.50 and 3.33).
- They are often cited in qualitative responses as reasons for choosing a platform, but do not stand out statistically over others.

5. Promotional Offers

- This is the lowest-rated attribute (mean ≈ 3.12).
- The only statistically significant difference found is that users rate delivery speed higher than promotional offers, suggesting that while discounts are appreciated, they are less critical than operational efficiency.

6. Brand Reputation

- Receives a moderate mean score (≈ 3.43).
- Not a statistically significant differentiator, but still a consideration for some users.

Retailer Rankings Based on Statistical Findings:

The overall mean ratings for each online grocery platform were calculated by averaging user scores across all key attributes (price, delivery speed, product variety, delivery quality, platform usability, customer service, promotional offers, and brand reputation). Here is the ranking based on these aggregated mean score

Table 5: Platform Ranking

Rank	Platform	Overall Mean Rating
1	Amazon Fresh	4
2	Swiggy Instamart	3.9
3	Zepto	3.64
4	Bigbasket	3.39
5	Blinkit	3.36
6	Flipkart Minutes	2.87

Observation:

- **Amazon Fresh** is rated highest overall by users, scoring best on most attributes.
- **Swiggy Instamart** and **Zepto** also perform well, with strong ratings across several categories.
- **BigBasket** and **Blinkit** are in the middle, with similar average ratings.
- **Flipkart Minutes** is rated lowest among the major platforms in this dataset.

These rankings are based on the mean of all attribute ratings provided by respondents for their favourite platform, offering a statistically grounded comparison of user satisfaction across retailers.

4.4. DISCUSSION

The results had vindicated that even though all aspects contributed to consumer decision-making, some aspects like delivery speed, platform ease, and brand name had come forth as other valuable determinants. Price, Product Variety and Customer service to be pivotal in Amazon fresh's success, emphasizing the fact that price considerations continued to play a key role in decision-making,

The comparative study had also identified that Amazon Fresh had been able to dominate because it had excelled in more factors at the same time, while other competitors such as Swiggy Instamart, Zepto, Big basket, Blink had fallen behind because they had relatively lower marks in Price, Customer Service. In addition, the information had indicated that consumer loyalty did not result solely from price competitiveness but also from the overall shopping experience, convenience, and brand trust. These findings concurred with past literature that had focused on the multi-dimensional aspects of online buying behavior in food shopping environments.

5. CONCLUSION

The research had successfully explored the determinants influencing the choice of online grocery stores among consumers based on a descriptive and statistical analysis method. Examining responses from 300 respondents, it had been discovered that variables including pricing, speed of delivery, variety of products and quality, ease of using the platform, promotional discounts, customer care, and brand image greatly influenced consumer decisions. Speed of delivery, proved to be the most important predictors of satisfaction and loyalty. **Amazon Fresh** is the top performer across almost all attributes, followed closely by **Swiggy Instamart** and **Zepto**, **Delivery speed** is the most critical factor for users, distinguishing the highest-rated platforms. Lower-rated platforms like **Flipkart Minutes** may need to improve across multiple attributes to compete more effectively. These findings provide a clear, data-driven comparison to guide both consumers and platform managers in understanding competitive strengths and areas for improvement.

6.Limitations of the Study & Further scope

Sampling Bias and Generalizability-. The sample is not random and is mostly of female respondents (87%) and individuals aged 30-40 (90%), with most participants from middle- to high-income groups. This demographic concentration limits the generalizability of the findings to the broader population, particularly to males, older adults, or those with lower incomes.

Geographic Limitation-The research is geographically confined to the Kolkata Metropolitan Area. Consumer preferences, platform availability, and shopping behaviours may differ significantly in other Indian cities or rural areas due to cultural, economic, and infrastructural variations.

Reliance on Self-Reported Data-Data collection relied on structured online questionnaires, which are subject to self-reporting biases such as social desirability, recall errors, or respondents misinterpreting questions. This can affect the accuracy and reliability of the responses.

Cross-Sectional Design-The study employs a cross-sectional design, capturing consumer preferences and behaviors at a single point in time. This approach does not account for changes in consumer attitudes or market dynamics over time, especially in a rapidly evolving sector like online grocery retailing. Longitudinal studies would be needed to assess how preferences shift in response to factors like technological advancements or changes in competitive strategies.

Limited Scope of Variables-Although the research considered several influential factors (e.g., price, delivery speed, product variety, usability, customer service, promotional offers, brand reputation), other potentially important variables—such as payment security, environmental concerns, or the impact of external shocks (e.g., supply chain disruptions)—were not included. This may result in an incomplete understanding of all determinants influencing consumer choice.

Platform Representation-The comparative analysis was limited to major platforms (Amazon Fresh, Swiggy Instamart, Zepto, Bigbasket, Blinkit, Flipkart Minutes). Smaller or emerging online grocery retailers were not included, which could overlook niche preferences or innovations present in less prominent platforms.

Statistical Significance and Interpretation-While many factors were rated as important, only one pairwise comparison (delivery speed vs. promotional offers) reached statistical significance at the conventional alpha level. The strength of conclusions regarding the relative importance of each attribute is missing.

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