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A PRE AND POST PANDEMIC COMPARISON OF E-COMMERCE VS. BRICK-AND-MORTAR: ANALYSING THE EVOLUTION OF CONSUMER PREFERENCES AND SHOPPING BEHAVIOURS OF FMCG CONSUMER GOODS

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ABSTRACT:

The COVID-19 pandemic significantly altered consumer behaviour in the Fast-Moving Consumer Goods (FMCG) sector, shifting preferences between e-commerce and brick-and-mortar retail. Before the pandemic, physical stores dominated FMCG sales due to consumers' preference for in-store shopping, immediate availability, and the ability to examine products. E-commerce, though steadily growing, was primarily supplementary. However, the pandemic's lockdowns and social distancing measures accelerated the adoption of online shopping, making e-commerce a crucial channel for consumers seeking convenience and safety.

This study combines qualitative consumer surveys and quantitative analysis of sales trends to examine factors driving the shift to e-commerce, including technological advancements, improved logistics, and changing expectations for convenience and personalization. It also explores the resilience of brick-and-mortar stores and the strategies they've adopted to stay relevant, such as integrating digital technologies, enhancing in-store experiences, and using hybrid models like click-and-collect.

The findings reveal a nuanced evolution in consumer behaviour, showing that while e-commerce has grown, brick-and-mortar stores remain valuable for certain product categories and demographics. Long-term implications for retailers underscore the need for an omnichannel approach that leverages both online and offline platforms to meet diverse consumer needs.

This research paper offers insights into how FMCG retail has evolved post-pandemic, highlighting the importance of flexibility and innovation in adapting to the rapidly changing market.

Keywords: FMCG, E-Commerce, Brick and Mortar, Post and pre pandemic era, Consumer preference

Introduction:

The Fast-Moving Consumer Goods (FMCG) industry, which includes essential products like food, beverages, personal care items, and household goods, is crucial to the global economy. Traditionally dominated by physical retail stores, the sector experienced a significant shift due to the COVID-19 pandemic. Lockdowns and social distancing measures led to the closure or limited operation of physical stores, pushing consumers towards e-commerce. Before the pandemic, online shopping was mainly for non-perishable items, but safety concerns during the pandemic accelerated the adoption of e-commerce for daily necessities. This shift has profoundly changed consumer behavior and retail dynamics within the FMCG sector.

E-commerce platforms have provided a safe and convenient way for consumers to purchase essential goods from home, significantly increasing their market share and challenging traditional brick-and-mortar stores. Online platforms have enhanced the shopping experience with personalized recommendations, user-friendly interfaces, and seamless payment systems, boosting consumer satisfaction and loyalty. Despite the rapid growth of e-commerce, brick-and-mortar stores remain crucial, especially for fresh produce where in-person quality inspection is preferred. Retailers have adapted by integrating digital technologies like click-and-collect services, blending the convenience of online shopping with the immediacy of physical stores. This hybrid model caters to consumer demand for flexibility, combining the strengths of both e-commerce and physical retail. In-store experiences remain essential for certain demographics, offering immediate product availability, promotional events, and immersive shopping environments. Advanced technologies like augmented reality and virtual reality further enhance these experiences, emphasizing the freshness and quality of perishables.

The future of FMCG retail is centered on an omnichannel approach that integrates online and offline platforms seamlessly. Successful retailers will provide a cohesive shopping experience across channels, leveraging data analytics, advanced logistics, and personalized marketing. This strategy addresses the need for convenience and caters to consumer preferences for safety, personalization, and community engagement. The COVID-19 pandemic has accelerated the shift to e-commerce while maintaining the importance of brick-and-mortar stores. The omnichannel model, combining the strengths of both online and physical retail, is set to define the industry's future, offering a flexible, personalized, and seamless shopping experience. Retailers that adapt to these evolving consumer preferences will be well-positioned to thrive in the post-pandemic market.

Objective

The primary objective of this research is to analyze and compare the evolution of consumer preferences and shopping behaviors for Fast-Moving Consumer Goods (FMCG) between e-commerce and brick-and-mortar retail channels in the post-pandemic era, with a reference to the pre-pandemic period. The study aims to identify the key factors influencing these changes, assess the impact of the pandemic on retail strategies, and provide insights into the future trajectory of FMCG retail.

Hypothesis:

Null Hypothesis (H0): The COVID-19 pandemic has not significantly accelerated the shift in consumer preferences from brick-&-mortar stores to ecommerce for FMCG products purchase.

Alternate Hypothesis (H1): The COVID-19 pandemic has significantly accelerated shift in consumerpreferences from brick-&-mortar stores to ecommerce for FMCG products purchase.

Literature Review:

1. Ludvik Eger et al. (2021) highlight a research gap in understanding COVID-19's impact on generational shopping behaviours. They emphasize differences: younger generations prefer online and health-related purchases, while older ones focus on essentials in physical stores. This underscores the need for an omnichannel retail strategy tailored to generational preferences in the FMCG sector.
2. Saurabh Ravi Kulkarni et al. (2020) investigate the shift in consumer preferences between offline and online grocery shopping during COVID-19 in India. They identify motivations like convenience, safety, and product comparison, and examine how gender and local COVID-19 cases influence behavior. These insights highlight the need for retail strategies prioritizing safety and convenience in both online and physical environments.
3. Katarina Valaskova et al. (2021) analyze demographic factors affecting consumer purchase patterns during COVID-19 in Slovakia, focusing on age, income, and occupation. They find

younger consumers and service sector employees shift to online shopping, while lower-income individuals prefer private-label products. These insights emphasize the need for tailored retail strategies to specific demographic groups in the FMCG sector.

4. Dr. Tareq N. Hashem (2020) examines the impact of COVID-19 on e-shopping in Jordan, focusing on gender & education. The study finds rise in online shopping, especially among women & diploma holders, driven by necessity. These insights highlight the importance of localized e-commerce strategies & targeted digital marketing for FMCG sector.
5. Adnan Duygun et al. (2020) use Maslow's Hierarchy of Needs to study consumer behavior during COVID-19, noting a shift towards physiological and safety needs, like food and hygiene products. Social distancing influenced belonging needs via online interactions, while respect and self-actualization needs varied. These insights are vital for aligning FMCG marketing and retail strategies with evolving consumer priorities.
6. Laato et al. (2020) use the stimulus-organism-response (S-O-R) framework to study early COVID-19 consumer behaviors, noting that information overload and anxiety from online exposure led to panic buying. These insights stress the importance of managing information flow and understanding crisis-driven consumer responses, aiding in developing effective retail and engagement strategies for future crises.
7. Raja Sarkar et al. (2017) compares online and offline shopping preferences in India, finding younger consumers prefer online shopping for convenience, while traditional stores appeal for tangible benefits. Using the five-stage consumer decision-making model, the study highlights differences in consumer experiences. These insights support developing an omnichannel retail strategy to meet diverse preferences & enhance FMCG retail performance.
8. Messaline Nicolai et al. (2021) analyze how COVID-19 accelerated retail digital transformation in Canada, China, and France. Innovations include live streaming in China, marketplace support in France, and traffic monitoring apps in Canada. These insights provide a global perspective on pandemic-driven retail trends, aiding FMCG research by contextualizing consumer behavior shifts and digital strategies across markets.
9. Priyabrata Roy et al. (2023) review 90 articles to analyze shifts in consumer buying behavior across online and offline channels before, during, and after COVID-19. They highlight how convenience, payment methods, and offers influenced preferences, withpandemic accelerating the shift to online shopping due to safety concerns. These changes likely led to permanent habit shifts, aiding FMCG research by refining marketing strategies for evolving consumer needs.

10. Amir Khan et al. (2023) study e-commerce behavior shifts in Aligarh, India, before and after COVID-19, using data from 312 respondents. They find increased e-commerce usage due to social distancing, ease of use, and local store shortages. Younger consumers are more engaged, while older individuals face monetary and security barriers. These insights help address diverse consumer needs and challenges in tier-II cities for your FMCG research.

Methodology:

As a sample method, we employed basic random sampling. We created a 25-question survey and shared it with around 250 individuals via peers, social media, and other ways. After that, we collated their answers. After being cleaned and verified, 180 potential samples are gathered for additional analysis. Primary and secondary sources contributed the data we analysed. The primary research region is Chennai. The main source of data was professors and students from different colleges and schools. A variety of online resources, including books, journals, and websites, were used to collect secondary data.

Variables used in questionnaire:

Demographic details: Age, Gender, Locality, Occupation, Family monthly income

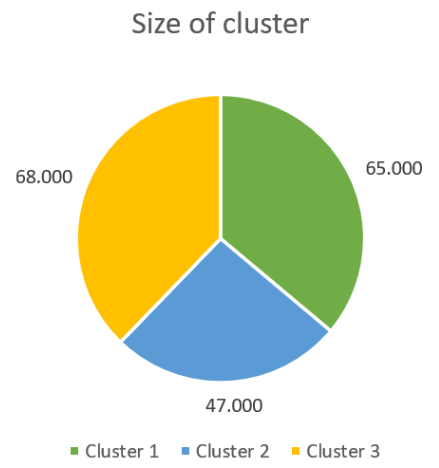
Feature Based: Purchase behaviour of customers before, during and post pandemic with respect to channel, reason for choosing the particular channel, the satisfaction level of choosing the particular channel and the challenges faced, and the future behaviour.

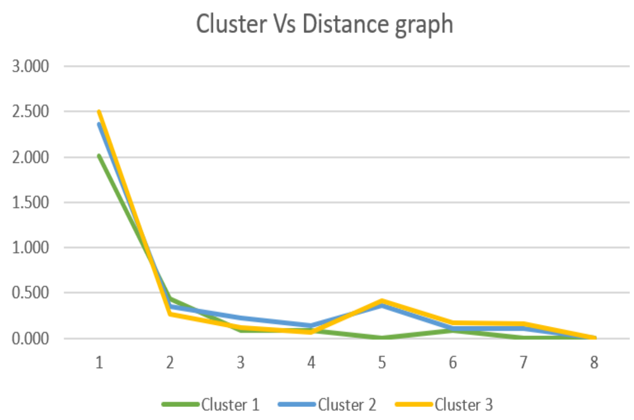
Analysis:

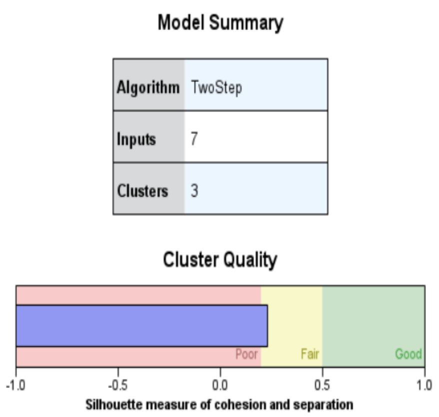
The distribution of the three clusters in this study revealed a considerable variance in the opinions on the categorization elements included in questionnaire questions, based on the minimum distance to the initial cluster. Through additional research, we were able to identify the traits of the three groups according to the 25 variables on the questionnaire that were used to determine the potential impact of the recommendation system on people's subconscious thoughts.The responses are divided into 3 clusters based on location. Cluster 1 mostly covers metropolitan, cluster 2 covers urban and cluster 3 covers semiurban and rural.

Iteration History

Iteration	Change in Cluster Centres		
	Cluster 1	Cluster 2	Cluster 3
1	2.011	2.365	2.502
2	0.436	0.353	0.263
3	0.084	0.219	0.113
4	0.083	0.135	0.067
5	0.000	0.361	0.419
6	0.089	0.103	0.173
7	0.000	0.108	0.162
8	0.000	0.000	0.000







Factors/Variables	Mean		
	Cluster 1	Cluster 2	Cluster 3
Before pandemic, how often did you shop for FMCG products online?	1.85	2.75	3.51
Before pandemic, how often did you shop for FMCG products in brick-and-mortar stores?	1.65	2.99	3.88
During pandemic, how often did you shop for FMCG products online?	1.95	2.84	3.68
During pandemic, how often did you shop for FMCG products in brick-and-mortar stores?	1.65	2.77	3.71
How often do you shop for FMCG products online now?	2.35	2.84	3.52
How often do you shop FMCG products in brick-and-mortar stores now?	1.95	3.06	3.75

Cluster 1 analysis:

The table examines the changes in shopping behaviors for Fast-Moving Consumer Goods (FMCG) in Cluster 1 across three periods: before, during, and after the pandemic. Before the pandemic, online shopping was moderately common (mean frequency 1.85), while in-store shopping was slightly less frequent (1.65). During the pandemic, online shopping frequency increased to 1.95 due to restrictions and safety concerns, but in-store shopping remained stable at 1.65, indicating continued reliance on physical stores. In the current post-pandemic period, online shopping has significantly risen to 2.35, driven by convenience and habits formed during the pandemic. In-store shopping also increased to 1.95, showing that physical stores still play a crucial role. This shift indicates a dual-channel approach, balancing online convenience with the immediacy and experience of brick-and-mortar stores, reflecting a nuanced evolution in post-pandemic shopping behavior.

Cluster 2 analysis:

The table analyses FMCG shopping behaviors in Cluster 2 across three periods: before, during, and after the pandemic. Before the pandemic, in-store shopping was dominant (mean frequency 2.99), while online shopping was slightly less frequent (2.75). During the pandemic, online shopping increased to 2.84 due to restrictions, while in-store shopping declined slightly to 2.77. In the post-pandemic period, online shopping remained stable at 2.84, indicating lasting preference for its convenience. However, in-store shopping saw a significant resurgence, rising to 3.06, surpassing pre-pandemic levels. This suggests that while online shopping is important, the physical shopping experience has regained prominence. The dual-channel approach, balancing online convenience with in-store experience, reflects evolving shopping behaviors in Cluster 2.

Cluster 3 analysis:

The table provides a detailed analysis of FMCG shopping behaviors in Cluster 3, showing how these behaviors evolved across three periods: before the pandemic, during the pandemic, and in the current post-pandemic period. Before the pandemic, in-store shopping was the most frequent method, with a mean frequency of 3.88, while online shopping was also common at 3.51. During the pandemic, online shopping frequency increased slightly to 3.68 as consumers adapted to restrictions and sought safer shopping options, while in-store shopping experienced a minor decline to 3.71. In the current post-pandemic period, online shopping has stabilized at 3.52, indicating that the pandemic-driven increase in digital shopping has become a lasting habit. However, in-store shopping has rebounded to 3.75, nearly matching pre-pandemic levels, suggesting that consumers have largely resumed their previous shopping routines with a slight preference for physical stores. This analysis highlights that while online shopping gained traction during the pandemic, consumers in Cluster 3 have returned to a balanced approach, with in-store shopping regaining prominence in overall shopping behavior.

Findings:

The analysis of shopping behaviors across Metropolitan (Cluster 1), Urban (Cluster 2), and Semiurban/Rural (Cluster 3) areas reveals distinct patterns before, during, and after pandemic:

1) Metropolitan Areas (Cluster 1): Consumers showed low shopping frequencies before the pandemic, with a slight increase in online shopping during the pandemic. Post-pandemic, online shopping continued to rise, though overall activity remained lower than in other areas.
2) Urban Areas (Cluster 2): Consumers preferred physical stores before the pandemic but shifted slightly towards online shopping during it. Post-pandemic, in-store shopping rebounded to exceed pre-pandemic levels, indicating a strong return to physical stores alongside consistent online shopping.
3) Semiurban/Rural Areas (Cluster 3): These areas had the highest shopping frequencies. While online shopping increased slightly during the pandemic, in-store shopping remained dominant. Post-pandemic, online shopping habits stabilized, and in-store shopping nearly returned to pre-pandemic levels.

Overall, while the pandemic influenced shopping behaviors across all areas, the extent of these changes and the return to pre-pandemic habits varied by cluster, validating the null hypothesis.

Recommendation:

Online Shopping of FMCG products:

1. **Enhanced Search Algorithms**: Improve search engines to help consumers discover a wider variety of products.
2. **Delivery Improvements**: Ensure on-time deliveries and extend services to rural areas.
3. **Discounts and Pricing**: Offer more discounts, maintain consistent pricing, and ensure quality assurance by matching product descriptions with deliveries.
4. **Better Packaging**: Improve packaging to protect goods during transit.
5. **Detailed Product Information**: Provide clear, detailed product information, including expiry dates and real-life photos.
6. **Simplified Navigation**: Simplify website and app designs for easier navigation.
7. **Stock Management**: Improve stock management to reduce out-of-stock issues.
8. **Security Measures**: Strengthen security to protect customer data.
9. **Support Small Businesses**: Feature locally sourced products.
10. **Transparent Return Policies**: Offer clear and fair return policies.
11. **Innovative Features**: Introduce augmented reality and AI-powered assistants.
12. **Community Engagement**: Foster community through online forums.
13. **Convenient Reordering**: Provide easy reordering options.
14. **Eco-Friendly Practices**: Promote sustainable practices.
15. **Competitive Pricing**: Ensure prices remain competitive.

Brick and motor shopping of FMCG products:

1. **Product Variety**: Offer a wider range of products, including niche and specialty items, to cater to diverse preferences.

2. **Stock Availability**: Ensure consistent stock levels to reduce out-of-stock situations.
3. **Efficient Checkout**: Improve checkout processes with more bill counters, self-service kiosks, and contactless payment options.
4. **Store Layout**: Optimize store layouts with clear signs&proper spacing for easynavigation.
5. **Cleanliness**: Maintain high standards of cleanliness, especially in high-touch areas.
6. **Knowledgeable Staff**: Provide friendly and knowledgeable staff to assist customers.
7. **Loyalty Programs**: Introduce loyalty programs, special promotions, & discounts.
8. **Store Apps**: Use apps with features like shopping lists, price comparisons, & stock checks.
9. **Extended Hours**: Offer extended store hours for greater flexibility.
10. **Eco-Friendly Options**: Provide eco-friendly products and reduce plastic packaging.
11. **Personalized Experience**: Create personalized experiences with events like cooking demonstrations, product launches, and workshops.

Limitations

1. Sample Representativeness: The analysis might be limited by the representativeness of the sample used. If the sample does not accurately reflect the broader population within each cluster, the findings may not be generalizable.

2. Temporal Scope: The study examines behaviours before, during, & after pandemic, but post-pandemic period is ongoing and still evolving. Long-term trends might not be fully captured.

3. Regional Variations: Research categorizes areas into 3 clusters but does not account for more granular regional variations or specific local factors that might influence shopping behaviours.

4. External Factors: Other external factors such as economic conditions, technological advancements, or changes in consumer preferences beyond the pandemic may have influenced shopping behaviors and were not accounted for.

5. Behavioral Measurement: The reliance on shopping frequency as a measure might not capture other nuances in consumer behavior, such as changes in spending patterns or preferences for specific product categories.

6. Data Collection Methods: If the data collection methods were primarily quantitative (e.g., surveys or sales data), they may lack qualitative insights into the reasons behind changes in shopping behavior.

Future Research Directions

1. Longitudinal Studies: Conduct studies over a longer period to capture ongoing changes in shopping behaviors and validate if the observed trends persist or evolve further.

2. Detailed Segmentation: Explore more granular segmentation within clusters to understand specific sub-group behaviours& preferences, which provide deeper insights into regional variations.

3. Qualitative Research: Incorporate qualitative research methods, such as interviews or focus groups, to gain better understanding of the motivations & attitudes behind shopping behaviors.

4. Impact of Technological Advances: Investigate how tech advancements, such as innovations in e-commerce or digital payment systems, influence shopping behaviours in different clusters.

5. Economic and Social Factors: Examine how broader economic & social factors, including changes in income levels or employment patterns, impact shopping behaviours across regions.

6. Consumer Preferences: Study changes in consumer preferences for specific product categories and how these preferences may have shifted due to the pandemic and other influencing factors.

7. Comparison with Other Markets: Extend the research to include comparisons with other geographic or international markets to identify if similar patterns are observed globally or if there are distinct regional differences.

8. Cross-Channel Behaviour: Explore the interaction between online & offline shopping channels in more detail, including how consumers use multiple channels in purchasing journey.

By addressing these limitations & pursuing research directions, future studies can provide good understanding of shopping behaviour& helps business adapt to evolving consumer preference.

Conclusion:

To succeed in the evolving FMCG industry, forming strategic partnerships is essential. Key partnerships include e-commerce platforms like Amazon and Alibaba, DTC brands for personalized experiences, and subscription services for consistent revenue. Collaborations with tech companies like Google and AWS can enhance supply chain and data analytics. Traditional retail chains remain important, while convenience stores, health and wellness stores, and discount outlets gain relevance. Partnering with global distributors, social media influencers, and sustainable brands can boost visibility and appeal, driving long-term growth.

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