



Digital Transformation in FMCG Retail: Consumer Attitude and Online Purchase Intention

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ABSTRACT: India's digital revolution has fulfilled consumer expectations and encouraged economic progress. Digital retailers are hoping to boost consumer retention, increase business success, and enhance FMCG consumers' online purchasing experience. Therefore, the study aims to look at the main factors impacting consumer attitude toward online FMCG retail and then how those factors impact consumer intention to make online purchases. This investigation has employed a combination of methods. Tiruppur City and Coimbatore City were hosts to the study. For research purposes, 310 data were collected. The relevant techniques were applied to the data analysis. Research found that consumer attitude had a significant negative impact on consumer online purchase intention (COPI) towards FMCG retail, whereas product and service facilities had a significant impact on consumer attitude (CA) toward online FMCG retail. Online experience has a significant impact on COPI toward FMCG retail. The paper highlights the significance of consumer perception, operational excellence, and user-centric online experiences for FMCG businesses operating online.

Keywords: Consumer Attitude, Consumer Online Experience, E-commerce, E-retail, Fast-Moving Consumer Goods (FMCG), Online Shopping Behaviour

I. INTRODUCTION

Retail digital transformation is the integration of technology into a retailer's operations to enhance productivity and consumer satisfaction and drive development. Aromal (2023) had said that "The retail sector has undergone a significant transformation in the past decade, with digital commerce leading to the shift from physical store shopping to online shopping, from cash to credit card payments, from mall shopping to online shopping, and from multiple vendor product listings to mall shopping." A recent poll by Reuters shows that 75% of fast-moving consumer goods (FMCG) firms prioritize digital transformation, indicating that supply chain management has become a top priority for many businesses (Genc, 2024). A survey by ICICI Lombard General Insurance predicts that the FMCG sector in India is expected to grow at a rate of 7-9% by 2024, driven by government actions to boost consumption and employment and its resilience, agility, and digital transformation projects, indicating a robust future (ET Retail.com, 2024). The FMCG industry is experiencing continuous digital growth and evolving consumer buying behaviour, with its internet sales channel worth Rs. 1.7 lakh crore. Problem Statement: Despite the adverse effects of the pandemic, the industry has shown resilience and adaptability, as seen by the 8.6% volume increase recorded nationally in Q3 2023, with rural areas playing a key role with a growth rate of 6.4% (ET Retail.com, 2024). The sector has several hurdles in maintaining its market presence in both online and offline modes. However, when new business portals emerge, consumer perceptions will shift. The study's significance is that further research on consumers' experiences with online retail buying based on specific current models is important. Applying certain models to demonstrate the significant relationships that exist between one another is essential for improving company efficiency. Study Scope: It will demonstrate to us how much they use online retail purchasing, as well as their

awareness, perceived effectiveness, information efficiency, and overall consumer attitude toward online retail stores. Numerous industries will benefit from those consumer research analyses, including the advertising team, retailers' online and physical stores, manufacturers, retailers who will enable their online retail shopping apps, and certain agents who will develop strong strategies after learning about the strong correlation between those constructs.

II. REVIEW OF LITERATURE

E-Commerce in FMCG: E-commerce provides FMCG firms with more reach, personalized marketing, a better consumer experience, and increased revenues by providing a broader selection of items and a more seamless purchasing experience (Beer, 2024). (Fornari et al., 2018) The study explores the Era of Retailing 4.0 in FMCG, focusing on e-commerce expansion in the grocery industry. It reveals that online-native shops significantly influence e-grocery dynamics due to their lucrative but lower-than-traditional channels. Gupta et al. (2024) highlighted the benefits and anticipated penetration volume of e-commerce. The growth of technological drivers and consumer perceptions in e-commerce is expected to accelerate the future of retail and industry decisions.

Factors Driving Consumers to Shift Consumption Behaviour: (Vamsi et al., 2022) The research analyzed purchase behaviour and identified key factors influencing consumers' purchasing decisions for FMCG online. The study found significant correlations between eight organizational variables, with an R-squared value of 87.8% and a P-value less than 0.05, indicating a well-fit model and significant impact on the dependent variable. (Hassan et al., 2021) According to the study, six aspects greatly impact Indian consumers' online purchase behaviour: efficiency, system availability, privacy, responsiveness, fulfillment, and interaction. (Rupali, 2018) The study aimed to understand factors influencing online shopping in Pune. It found that age doesn't significantly influence preferences, but both genders show that online shoppers prefer the same constant for online shopping, consumer satisfaction, and after-sales services. **Research Gap:** Previous research has found correlations between consumer purchase intentions and online shopping/retailing, with more contributors from other countries. Location-based consumer behaviour research is crucial for understanding FMCG product sales. This study focused on the relationship between factors and consumer attitude by creating a conceptual model, and the questionnaire was framed using earlier research.

2.1 Conceptual Framework

Attitude: (Yang & Lester, 2004) A study of 180 students found 11 positive and ten negative aspects of internet shopping, as well as behavioural trends between online shoppers and non-shoppers. Online shoppers had positive qualities (convenience and efficiency), while non-shoppers had negative features (effort/impersonality). There was a substantial difference between shoppers and non-shoppers. **Online Purchase Intention:** (Brown et al., 2003) The study identified seven distinct shopping orientations, including personalizing, recreational, economic, engaged, convenience-oriented, community-oriented, and indifferent shoppers, all influencing purchasing intention. **Behavioural variables:** (Cho, 2004) The study identified nine indicators that linked attitudes towards e-shopping and the likelihood of abandoning an intended transaction. It found that individuals with positive attitudes were less likely to abandon a planned online transaction. Additionally, the study found that e-shopping views mediate the impact of beneficial variables on the intention to abandon. **Role of Satisfaction:** (Abdul-Muhmin, 2010) A study using OLS multiple regression found that overall happiness with online purchases and attitude towards shopping are key predictors of repeat purchase intention, while specific characteristics like pricing, product quality, consumer service, payment options, security, and delivery time also contribute to overall satisfaction. **Experience of using e-commerce:** (Tuan et al., 2022) The study found that e-commerce platform quality indirectly influences buying intention, while information, trust, perceived risk, and perceived utility directly affect it. The study found that e-commerce quality positively influences trust but negatively affects perceived risk, while all these criteria directly influence purchasing intention. **Online Shopping Experience:** (Izogo & Jayawardhena, 2018) The study analyzed factors influencing online purchasing experiences using netnography and conversation analysis on a major online retailer's Facebook page in 11 African nations. They identified two main types of online shopping (OSE) and five unique behavioural outcomes, integrating them into current frameworks. Consumers use reviews as a platform for various behaviour. **Online Shopping Acceptance Model:** (Zhou et al., 2007) The authors reviewed existing studies and created the Online Shopping Acceptance Model (OSAM), combining

traditional retailing and marketing theories such as TAM to examine consumer characteristics in the context of online purchasing. The model addresses research topics related to consumer online buying.

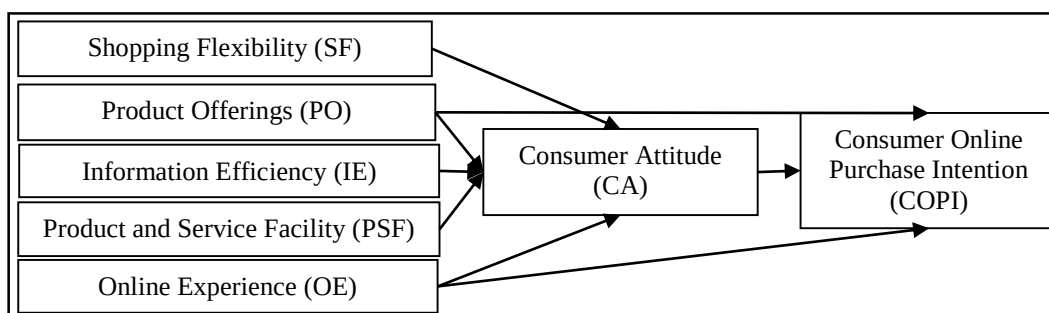


Figure 1: Conceptual Research Model

Fig. 1 shows the relationship between exogenous constructs (SF, PO, IE, PSF, and OE) and endogenous constructs (CA and COPI). The conceptual research model was created based on theories TPB, OSAM, ECAM, and TAM (Ajzen, 1991; Fishbein & Ajzen, 1975; Davis et al., 1989; Lee et al., 2001) and considered certain indicators used in previous research (Izogo & Jayawardhena, 2018). Based on this, a questionnaire was created, and eight hypotheses were formulated and evaluated using proper statistical analysis and tools.

III. OBJECTIVE OF THE STUDY

- To analyze the factors influencing consumer attitude and purchase intention toward online FMCG retail.

3.1 Hypotheses

- ✓ **H1:** SF has a significant impact on CA toward online FMCG retail.
- ✓ **H2:** PO has a significant impact on CA toward online FMCG retail.
- ✓ **H3:** IE has a significant impact on CA toward online FMCG retail.
- ✓ **H4:** PSF has a significant impact on CA toward online FMCG retail.
- ✓ **H5:** OE has a significant impact on CA toward online FMCG retail.
- ✓ **H6:** CA has a significant impact on COPI toward FMCG retail.
- ✓ **H7:** PO has a significant impact on COPI toward FMCG retail.
- ✓ **H8:** OE has a significant impact on COPI toward FMCG retail.

IV. RESEARCH METHODOLOGY

This research utilized a quantitative research method, using numerical data such as statistics and surveys. Non-probability sampling approaches are used, with purposive and snowball sampling strategies used to select participants who purchase FMCG products online. Both primary and secondary data collection methods are used. The Google Questionnaire was developed, and the survey was obtained through email and WhatsApp. The research area focuses on Coimbatore and Tiruppur, two Tamil Nadu cities with strong economic expansion and a rising consumer base for Fast-Moving Consumer Goods (FMCG) via online retail platforms. A closed-ended questionnaire was developed to gather quantitative data that can be easily analyzed and compared. The questionnaire has three sections: demographic information, casual behaviour of respondents toward online retail, and objective-based questions measured using the Likert scale (Strongly Agree to Strongly Disagree). Table 1 lists of constructs, the number of indicators within each construct, and the sources.

Table 1: Questionnaire Development

Factors	No. of Items	Sources
Shopping Flexibility	3	(Yang & Lester, 2004; Cho, 2004)
Product Offerings	3	(Cho, 2004)
Information Efficiency	2	(Yang & Lester, 2004; Cho, 2004)
Product and Service Facility	2	(Abdul-Muhmin, 2010)
Online Experience	3	(Izogo & Jayawardhena, 2018; Tuan et al., 2022)
Consumer Attitude toward online FMCG Retail	3	(Yang & Lester, 2004)
Consumer Online Purchase Intention toward FMCG Retail	2	(Dang et al., 2020)

A pilot study was conducted to test the reliability and validity of the questionnaire and research design, with a sample size of 10% of the actual data. The pilot phase involved 35 responses from various demographics. Due to low item-to-total correlation, one item from Information Efficiency, one from Product and Service Facility, and one from Consumer Online Purchase Intention were dropped. The refined questionnaire was developed and used to collect the sample data. The study employed seven constructs, totaling 18 indicators, with a 10:1 rule for factor analysis, which states that there should be 10 respondents for each indicator, implying that at least 180 respondents are required. However, to demonstrate the quality of the findings, 310 sample data were collected. After subtracting not-received data and unfilled data entries, 288 were set aside for investigation. The appropriate data were analyzed using percentage analysis, CFA, and SEM using appropriate measurement scales. Microsoft Excel, SPSS, and AMOS software are utilized to obtain adequate data and evaluate the Conceptual Research Model.

V. DATA ANALYSIS AND INTERPRETATION

Data analysis and interpretation have been given in accordance with the questionnaire sections.

5.1 SECTION I

Table 2: Demographic Information

Respondents' Information:		Respondents Count	Percentage
Gender	Female	163	56.6
	Male	125	43.4
	Total	288	100.0
Age	18 - 24	104	36.1
	25 -34	82	28.5
	35 - 44	56	19.4
	45 or older	46	16.0
	Total	288	100.0
Education	High School or Below	27	9.4
	Bachelor's Degree	223	77.4
	Master's Degree or above	38	13.2
	Total	288	100.0
Occupation	Government Employee	57	19.8
	Private Employee	124	43.1
	Self-Employed	23	8.0
	Others	84	29.2
	Total	288	100.0
Family Monthly Income	Less than Rs. 20,000	9	3.1
	Rs. 20,001 to Rs. 45,000	167	58.0
	Rs. 45,001 to Rs. 70,000	75	26.0
	Above Rs. 70,001	37	12.8
	Total	288	100.0

The first portion of the questionnaire contains demographic details regarding individual respondents. Table 2 shows that the majority (56.6%) of respondents were female, 36.1% were between the ages of 18 and

24, the majority (77.4%) had an undergraduate degree, 43.1% worked as private employees, and the majority earned between Rs. 20,001 and Rs. 45,000.

5. 2 SECTION II

Table 3: Casual Behaviour of Online Shoppers

Casual Behaviour of Respondents		N	%
Frequency of Online Shopping	Daily	24	8.3
	Weekly	69	24.0
	Every Two weeks	94	32.6
	Monthly	101	35.1
	Total	288	100.0
Online Retail App	Amazon	90	31.3
	Flipkart	88	30.6
	BigBasket	52	18.1
	JioMart	39	13.5
	Others	19	6.6
	Total	288	100.0
FMCG Category	Food & Beverages and Personal Care Products	119	41.3
	Home Care Products	54	18.8
	Health and Hygiene Products	36	12.5
	Other Products	79	27.4
	Total	288	100.0

The second section of the questionnaire was on the casual behaviour of online shoppers (Table 3). According to the report, 35.1% of people purchase FMCG items online on a monthly basis. The Most of the respondents purchased their FMCG items from Amazon online retail, with 31.3% doing so for food & beverages and personal care products.

5. 3 SECTION III

Before assessing the hypothesis, the following tests were performed: reliability analysis, scale validity, and measurement model fit indices.

5. 3. 1 Reliability and Validity Analysis

Table 4 indicates an alpha value of over 0.7, a Composite Reliability (CR) value of over 0.6, and an Average Variance Extracted (AVE) value of over 0.5, indicating satisfactory scale reliability and validity for conceptual testing research.

Table 4: Reliability and Validity Analysis

Factors	Label	Number of Items	alpha	CR	AVE
Shopping Flexibility	SF	3	0.961	0.962	0.895
Product Offerings	PO	3	0.978	0.982	0.949
Information Efficiency	IE	2	0.923	0.930	0.870
Product and Service Facility	PSF	2	0.947	0.949	0.904
Online Experience	OE	3	0.997	0.998	0.993
Consumer Attitude toward Online FMCG Retail	CA	3	0.972	0.976	0.932
Consumer Online Purchase Intention toward FMCG Retail	COPI	2	0.994	0.993	0.987

5.3.2 Confirmatory Factor Analysis (CFA)

CFA is a statistical tool used to evaluate the efficacy of measurement models by verifying the number of underlying dimensions and the pattern of item-factor correlations, similar to EFA, in analyzing the fit of the proposed factor model.

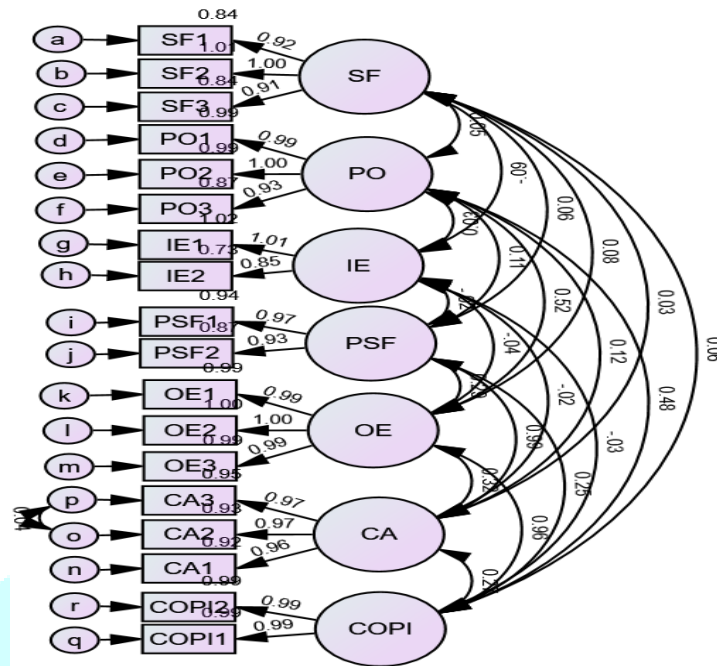


Figure 2: Confirmatory Factor Analysis

Fig. 2 shows the independent and dependent construct in a single multi-factorial CFA model, as determined by AMOS software. To strengthen the model, the error terms of two indicators—such as p-o—have been correlated. In Fig. 2, the altered model was displayed.

Table 5: Measurement Model Fit Indices

Fit analysis	Suggested P-values	P-values from the Model	Result
Chi-square (χ^2)	≥ 0.05	0.000	Function of AMOS
Chi-square (χ^2) / df	≤ 3.00	2.535	Fit
GFI	≥ 0.90	0.918	Fit
AGFI	≥ 0.80	0.875	Fit
NFI	≥ 0.90	0.972	Fit
CFI	≥ 0.90	0.983	Fit
RMSEA	≤ 0.10	0.073	Fit

Table 5 displays the measurement model fit indices, confirming the model's adequate fit to the data, enabling it to proceed to the next analysis step.

5. 3. 3 Structural Equation Modeling (SEM)

A structural model was developed with seven constructs: five exogenous constructs (shopping flexibility, product offerings, information efficiency, product and service facility, and online experience) and two endogenous constructs (consumer attitude and consumer online purchase intention). The analyzed data results are shown in fig. 3.

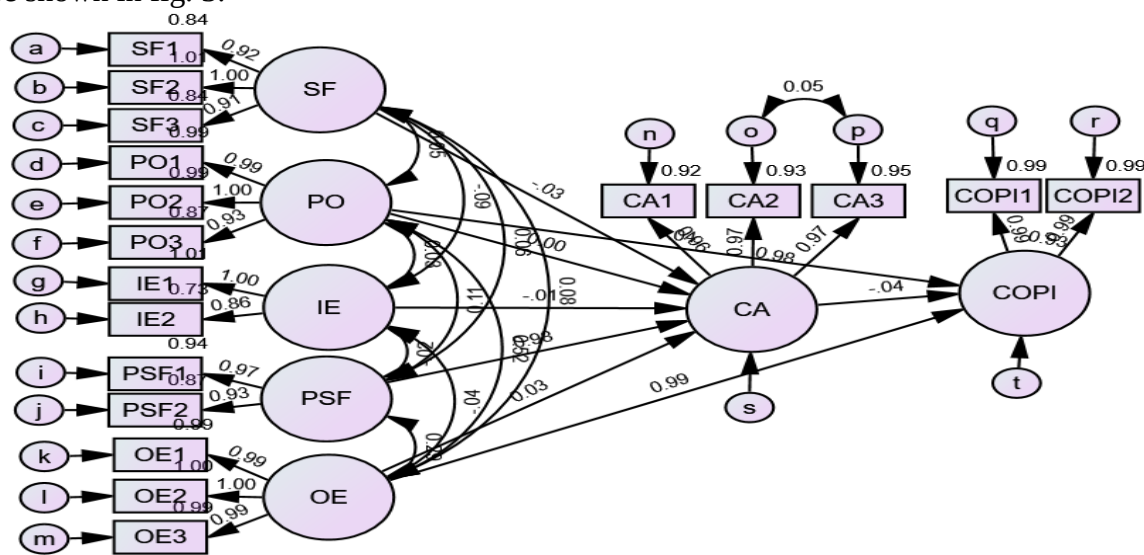


Figure 3: Structural Equation Modeling

Table 6: Structural Model Fit Indices

Fit analysis	suggested <i>P</i> -values	<i>P</i> -values from the Model	Result
Chi-square (χ^2)	≥ 0.05	0.000	Function of AMOS
Chi-square (χ^2) / df	≤ 3.00	2.489	Fit
GFI	≥ 0.90	0.917	Fit
AGFI	≥ 0.80	0.878	Moderate Fit
NFI	≥ 0.90	0.972	Fit
CFI	≥ 0.90	0.983	Fit
RMSEA	≤ 0.10	0.072	Fit

The structural model was well-suited, according to the research (Table 6). The chi-square (χ^2) value is 288.702, with 116 degrees of freedom. The p-value of χ^2 was 0.00, not meeting the criterion for a fit model. However, the GFI (Goodness of Fit Index) of 0.917 is greater than 0.9, while the AGFI of 0.878 is above 0.8. The normed fit index (NFI) and CFI are greater than 0.9, suggesting a satisfactory model fit (Hair et al., 1998). Table 7 summarizes the results of the hypothesis testing.

Table 7: Findings of the Hypothesis Testing

Hypotheses	Relationship	Standardized Estimate	p-value	Decision
H1	CA<---SF	-0.034	0.116	Not supported
H2	CA<---PO	0.003	0.918	Not supported
H3	CA<---IE	-0.013	0.576	Not supported
H4	CA<---PSF	1.170	***	Supported
H5	CA<---OE	0.042	0.18	Not supported
H6	COPI<---CA	-0.028	0.039	Not supported as the relationship is significant but negative
H7	COPI<---PO	-0.033	0.066	Not supported
H8	COPI<---OE	1.098	***	Supported

A total of eight hypotheses were examined using a structural equation model (Table 7), with two (H4 and H8) being supported because the significant value was smaller than .05, one (H6) being negatively supported, two (H2 and H5) being positively insignificant, which was not supported, and three (H1, H3, and H7) being negatively insignificant, which was not supported because the significant value was greater than .05.

VI. RESULT AND DISCUSSION

The study used CFA and SEM analysis to test eight hypotheses and a conceptual research model. It found that consumer attitude negatively influences consumer online purchase intention (COPI), while product and service facility significantly impact consumer attitude (CA). Online experience positively impacts COPI. The study found that operational effectiveness, which means that research shows a strong influence of product and service facilities on purchase intention, reliable delivery services, efficient consumer assistance, and quality assurance, are key factors in boosting purchase intention. Positive attitudes, influenced by user experience and brand trust, lead to higher purchase rates. The online experience, including a simple interface, quick loading times, and navigation, is crucial for influencing purchase intention. Other elements, such as shopping flexibility, information efficiency, and product offering options, had little impact.

VII. CONCLUSION

The report emphasizes the importance of user-centric online experiences, operational excellence, and consumer perception for online FMCG businesses. To boost consumer confidence and encourage sales, it suggests investing in dependable shipping, efficient consumer service, and quality assurance. Consumer attitudes have an impact on consumer online purchase behaviour but the relationship was negative. Therefore, retailers should use targeted marketing techniques and increase consumer service programs to improve consumers' perceptions and promote more positive attitudes towards their businesses. A simple and insightful online shopping platform has a huge influence on consumers' intention to purchase. The research has limitations, such as being limited to a certain city and not confirming every proposed relationship. Although the model demonstrates strong overall coherence, certain factor relationships suggest intriguing avenues for future exploration, which may enrich the understanding of underlying dynamics. Further investigations may examine regional comparisons, investigate additional significant construct, and carry out longitudinal studies to get a more profound comprehension of consumer buying patterns in online FMCG retail.

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