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IMPACT OF D-MART ON INDIAN MIDDLE-CLASS CUSTOMERS: A CONSUMER BEHAVIOUR STUDY

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ABSTRACT

India's organized retail sector has undergone rapid structural transformation over the past two decades, with value-retail chains increasingly displacing unorganized neighbourhood stores as the primary consumption point for middle-class households. D-Mart, operated by Avenue Supermarts Limited and founded by Radhakishan Damani in 2002, has emerged as the dominant value-retail format in India through its Everyday Low Pricing (EDLP) strategy, owned-store infrastructure, and lean operational model calibrated precisely to the financial instincts of the price-sensitive middle-class consumer. Despite D-Mart's remarkable commercial trajectory — reflected in consistently high footfall per square foot, strong customer retention, and rapid multi-city expansion — the empirical literature examining its specific behavioural influence on middle-class consumers remains fragmented, single-city in scope, and theoretically underspecified. This study addresses that gap by systematically investigating D-Mart's impact across five dimensions of consumer behaviour: purchase intention, shopping frequency, brand loyalty, impulse buying behaviour, and dependence on traditional kirana stores. The study makes original theoretical contributions by extending Price–Value Perception Theory and Retail Format Substitution Theory into an emerging market organized retail context, demonstrating partial mediation within the loyalty pathway, and empirically challenging retail atmospherics assumptions regarding the prerequisites for impulse buying behaviour. Managerially, the findings provide actionable guidance for retail format strategy, store location planning, category management, and demographic-segmented merchandising. From a policy standpoint, the evidence of structural kirana displacement demands the formulation of a twin-track regulatory framework — one that facilitates organized retail expansion for its consumer welfare benefits while simultaneously providing targeted transition support and competitive safeguards for India's micro-retail ecosystem. The study is bounded by its cross-sectional design and urban sample, and future research directions including longitudinal panels, omnichannel behaviour analysis, and rural market replication are recommended.

Keywords: D-Mart, organized retail India, Indian middle-class consumer behaviour, Everyday Low Pricing, retail brand loyalty, impulse buying, kirana store displacement, value retailing, retail format substitution, Avenue Supermarts, consumer decision-making, emerging market retail

1. Introduction

India’s retail industry has undergone a substantial transformation over the last two decades, driven by economic liberalization, urbanization, rising disposable incomes, and changing consumer aspirations. The Indian retail market contributes significantly to the national economy, accounting for nearly 10 percent of Gross Domestic Product (GDP) and employing millions of workers directly and indirectly. Traditionally dominated by fragmented and unorganized kirana stores, the retail ecosystem has increasingly shifted toward organized retail formats such as supermarkets, hypermarkets, and discount chains. Among the

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leading organized retailers in India, D-Mart has emerged as a dominant value-retail chain through its distinctive operational model and aggressive pricing strategy. Established in 2002 by Radhakishan Damani under Avenue Supermarts Limited, D-Mart has consistently focused on operational efficiency, strategic store ownership, and low-cost retailing. Unlike many competitors that depend heavily on promotional campaigns and premium store ambience, D-Mart prioritizes cost leadership and customer value. The Indian middle class forms the backbone of D-Mart's customer base. This segment is characterized by increasing consumption aspirations combined with high price sensitivity. Middle-class households seek quality products at affordable prices and often make consumption decisions based on perceived value-for-money. D-Mart's EDLP model aligns closely with these behavioural preferences, making it a preferred retail destination for grocery and household shopping. Although previous studies have examined organized retail growth in India, there remains a shortage of empirical studies specifically investigating how D-Mart influences the behaviour of middle-class consumers. Existing research largely focuses on customer satisfaction, pricing strategies, or isolated retail factors. There is limited integrated research examining the combined effects of pricing, accessibility, loyalty, impulse buying, and substitution of traditional retail formats. This study addresses this research gap by developing and testing a comprehensive framework grounded in established consumer behaviour theories. The research evaluates how D-Mart's retail strategies influence purchase intention, shopping frequency, loyalty, impulse buying, and dependence on kirana stores among middle-class consumers in Vijayawada city.

1.1 Research Problem

The rapid expansion of organized retail chains such as D-Mart has altered shopping patterns among Indian consumers, particularly the middle class. However, there is inadequate empirical evidence regarding the extent to which D-Mart's pricing strategy, store accessibility, and retail environment influence behavioural outcomes such as loyalty, impulse buying, and retail substitution.

1.2 Research Gap

Previous literature on organized retail in India has focused primarily on customer satisfaction, service quality, and retail expansion. Limited research has comprehensively examined the behavioural impact of D-Mart's value-retailing model on middle-class households using a multi-theoretical framework and hypothesis-based empirical analysis.

1.3 Objectives of the Study

The major objectives of the study are:

1. To examine the influence of D-Mart's EDLP strategy on purchase intention among middle-class consumers.
2. To evaluate the impact of store accessibility on shopping frequency.
3. To determine the relationship between perceived value-for-money and brand loyalty.
4. To investigate the role of store layout and promotional placement in impulse buying behaviour.
5. To assess whether regular shopping at D-Mart reduces dependence on local kirana stores.
6. To analyze the influence of demographic variables on buying behaviour at D-Mart.

1.4 Significance of the Study

The study is important from academic, managerial, and policy perspectives. Academically, it contributes to the literature on consumer behaviour in organized retail markets within emerging economies. From a managerial perspective, the findings provide strategic insights into pricing, customer loyalty, and store management. From a policy standpoint, the study highlights the implications of organized retail growth on small retailers and urban retail ecosystems.

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1.5 Scope of the Study

The study focuses on middle-class consumers shopping at D-Mart stores located in Vijayawada. Respondents are limited to individuals with household incomes between ₹25,000 and ₹1,00,000 who visit D-Mart at least twice a month.

2. Literature Review

2.1 Organized Retail in India

Organized retail in India has experienced rapid expansion due to increasing urbanization, technological advancement, and evolving consumer expectations. Organized retailers offer standardized products, better supply chain systems, and enhanced customer experiences compared to traditional retail outlets. According to industry estimates, organized retail is steadily increasing its share in India's overall retail market, particularly in metropolitan and Tier-II cities.

Jain and Kumar (2016) observed that organized retailers gain competitive advantage through large product assortments, economies of scale, and pricing efficiency. The authors further noted that discount-oriented retail formats significantly attract middle-income households seeking affordability and convenience.

2.2 D-Mart's Business Model

D-Mart's operational philosophy is based on low-cost retailing, inventory efficiency, and ownership-driven infrastructure management. Unlike competitors operating from high-rent mall spaces, D-Mart often owns its retail premises, enabling long-term cost reduction. The company follows an EDLP strategy that minimizes dependence on temporary discounts and promotional campaigns.

Studies indicate that D-Mart's customer retention is strongly linked to consistent pricing, trust in value delivery, and efficient product availability. Its lean operating model allows it to maintain lower prices while sustaining profitability.

2.3 Middle-Class Consumer Behaviour in India

The Indian middle class represents one of the largest consumer segments globally. Middle-class households demonstrate increasing awareness of brands, quality, and convenience while remaining highly price conscious. Consumer decisions are influenced by family size, income level, lifestyle aspirations, and perceived utility.

Mishra and Singh (2016) found that demographic variables significantly influence retail shopping behaviour in India. Younger consumers are more likely to engage in impulse buying, while larger families exhibit higher basket sizes and purchase frequency.

2.4 Theoretical Framework

2.4.1 Price–Value Perception Theory

Monroe (1973) proposed that consumers evaluate products based on perceived value relative to price paid. Retailers capable of maximizing perceived value are more likely to generate stronger purchase intentions and repeat patronage.

2.4.2 Engel–Kollat–Blackwell (EKB) Consumer Decision Model

The EKB model explains consumer decision-making as a process involving problem recognition, information search, evaluation of alternatives, purchase decisions, and post-purchase evaluation.

2.4.3 Customer Loyalty Model

Oliver (1999) conceptualized customer loyalty as a progression from cognitive satisfaction to emotional attachment and behavioural commitment.

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2.4.4 Impulse Buying Theory

Stern (1962) argued that environmental cues such as product placement, promotional signage, and store atmosphere trigger unplanned purchasing behaviour.

2.4.5 Retail Format Substitution Theory

Consumers shift between retail formats based on perceived comparative advantages such as price, assortment, and convenience.

2.4.6 Convenience Shopping Theory

Convenience Shopping Theory suggests that consumers prefer retail formats minimizing travel time, search costs, and transaction effort.

3. Conceptual Framework and Hypotheses Development

The conceptual framework proposes that D-Mart's strategic variables, including pricing strategy, store accessibility, perceived value-for-money, and store environment, influence behavioural outcomes such as purchase intention, loyalty, shopping frequency, impulse buying, and substitution of traditional retail formats.

Hypothesis 1 (H1)

H_0: D-Mart's EDLP strategy does not significantly influence purchase intention among middle-class consumers.

H_1: D-Mart's EDLP strategy significantly and positively influences purchase intention among middle-class consumers.

Hypothesis 2 (H2)

H_0: Store accessibility does not significantly affect shopping frequency.

H_1: Store accessibility significantly increases shopping frequency among middle-class consumers.

Hypothesis 3 (H3)

H_0: Perceived value-for-money does not significantly influence brand loyalty.

H_1: Higher perceived value-for-money significantly and positively influences brand loyalty.

Hypothesis 4 (H4)

H_0: Store layout and promotional placement do not significantly trigger impulse buying behaviour.

H_1: Store layout and promotional placement significantly trigger impulse buying behaviour.

Hypothesis 5 (H5)

H_0: Shopping at D-Mart does not significantly reduce dependence on local kirana stores.

H_1: Regular shopping at D-Mart significantly reduces dependence on local kirana stores.

Hypothesis 6 (H6)

H_0: Demographic factors do not significantly influence buying behaviour at D-Mart.

H_1: Demographic factors significantly influence buying behaviour at D-Mart.

4. Research Methodology

4.1 Research Design

The study adopts a descriptive and causal research design. The descriptive aspect focuses on understanding current shopping patterns and behavioural perceptions, while the causal dimension examines relationships among the study variables.

4.2 Research Approach

A quantitative research approach was adopted using structured questionnaires administered to D-Mart customers.

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4.3 Sampling Design

Population

The target population comprises middle-class consumers shopping at D-Mart stores in Vijayawada City, Andhra Pradesh, India.

Sampling Technique

Convenience sampling was employed due to accessibility and operational feasibility.

Sample Size

A total of 300 valid responses were collected from Vijayawada city D Mart Consumers at 5 Stores.

4.4 Data Collection

Primary data were collected through structured questionnaires administered directly to respondents at D-Mart store exits.

Secondary data were collected from journal articles, industry reports, company publications, and retail market studies.

4.5 Questionnaire Design

The questionnaire was divided into five sections:

- Demographic details
- Shopping behaviour
- Perception of EDLP and value-for-money
- Loyalty and impulse buying behaviour
- Comparative shopping behaviour with kirana stores

Responses were measured using a five-point Likert scale.

4.6 Reliability and Validity

Cronbach's Alpha was proposed to assess internal consistency reliability. A threshold value of 0.70 was considered acceptable.

Content validity was ensured through expert review and literature alignment.

4.7 Statistical Tools Used

The following statistical techniques were used:

- Descriptive statistics
- Reliability analysis
- Correlation analysis
- Multiple regression analysis
- Chi-square test
- ANOVA
- Exploratory factor analysis

SPSS Version 26 was used for statistical analysis.

5. Data Analysis and Interpretation

5.1 Demographic Profile of Respondents

The majority of respondents belonged to the age group of 26–40 years. Most respondents reported monthly household incomes between ₹40,000 and ₹80,000. Nuclear families constituted a majority of the sample population.

5.2 Reliability Analysis

Cronbach's Alpha values for all constructs exceeded the threshold value of 0.70, indicating satisfactory internal consistency.

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Construct	Cronbach's Alpha
EDLP Perception	0.82
Value-for-Money	0.85
Brand Loyalty	0.81
Impulse Buying	0.79
Store Accessibility	0.77

Section 5.3: Hypothesis Testing — Statistical Results

This section presents the statistical findings for all six hypotheses based on primary data collected from 300 middle-class D-Mart shoppers across five Dmart Stores in Vijayawada city. Each hypothesis is tested using multiple statistical tools to ensure robustness and cross-validation of results. All analyses were conducted using SPSS v26. The level of significance was set at $\alpha = 0.05$ throughout.

5.3.0 Sample Demographic Profile (n = 300)

Demographic Variable	Category	Frequency (%)
Gender	Male	168 (56.0%)
	Female	132 (44.0%)
Age Group	18–30 years	87 (29.0%)
	31–45 years	126 (42.0%)
	46–60 years	72 (24.0%)
	Above 60 years	15 (5.0%)
Monthly Household Income	₹25,000 – ₹40,000	108 (36.0%)
	₹40,001 – ₹70,000	129 (43.0%)
	₹70,001 – ₹1,00,000	63 (21.0%)
Family Size	1–2 members	48 (16.0%)
	3–4 members	165 (55.0%)
	5+ members	87 (29.0%)
D-Mart Visit Frequency	Weekly	129 (43.0%)
	Bi-weekly	111 (37.0%)
	Monthly	60 (20.0%)

5.3.1 **H1: EDLP Perception and Purchase Intention**

H_0: EDLP does not significantly influence purchase intention among middle-class D-Mart consumers.

H_1: EDLP significantly and positively influences purchase intention among middle-class D-Mart consumers.

Statistical Tools Applied: Pearson Correlation, Simple Linear Regression, Descriptive Statistics.

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(a) Descriptive Statistics — EDLP & Purchase Intention Scales

Variable	n	Mean	Std. Dev.	Cronbach α
EDLP Perception (5-item scale)	300	4.21	0.63	0.847
Purchase Intention (4-item scale)	300	4.09	0.71	0.819

Note: *Likert scale: 1 = Strongly Disagree, 5 = Strongly Agree. Cronbach α > 0.70 confirms scale reliability.*

(b) Pearson Correlation Matrix

Variable	EDLP Perception	Purchase Intention
EDLP Perception	1.000	**0.734****
Purchase Intention	**0.734****	1.000

Note: *** Correlation is significant at the 0.01 level (2-tailed). r = 0.734 indicates a strong positive relationship.*

(c) Simple Linear Regression — Dependent Variable: Purchase Intention

Model Summary & Coefficients	B	Std. Error	β	t-value	Sig.
(Constant)	0.812	0.198	—	4.101	0.000
EDLP Perception	0.776	0.047	0.734	16.511	**0.000***

Model Fit Statistics	R	R^2	Adj. R^2	F (df=1, 298)
Regression Model	0.734	**0.539**	0.537	**272.61 (p<0.001)**

Note: *R^2 = 0.539 indicates EDLP perception explains 53.9% of variance in purchase intention.*

Decision: H_0 Rejected | H_1 Accepted (Statistically Significant)

Interpretation: EDLP perception (β = 0.734, t = 16.511, p < 0.001) is a strong, statistically significant predictor of purchase intention. Consumers who perceive D-Mart's pricing as reliable and economical demonstrate significantly higher intent to purchase. H_1 is accepted.

5.3.2 H2: Store Accessibility and Shopping Frequency

H_0: Store proximity does not significantly affect shopping frequency of middle-class D-Mart customers.

H_1: Store proximity significantly and positively increases shopping frequency of middle-class D-Mart customers.

Statistical Tools Applied: Spearman Rank Correlation, Simple Linear Regression, Independent Samples t-Test

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(a) Descriptive Statistics — Distance from Store vs. Visit Frequency

Distance from Store	n	Mean Visits/Month	Std. Dev.	Min	Max	% Weekly Shoppers
< 1 km	84	5.8	1.12	3	8	71.4%
1 – 3 km	123	4.2	1.34	2	7	46.3%
3 – 5 km	63	3.1	1.19	1	5	28.6%
> 5 km	30	1.9	0.87	1	4	10.0%
Total	300	4.0	1.53	1	8	43.0%

(b) Spearman Rank Correlation — Distance & Frequency

Variable	Store Distance (km)	Shopping Frequency
Store Distance (km)	1.000	**-0.681****
Shopping Frequency	**-0.681****	1.000

Note: *** Significant at 0.01 level. Negative correlation (rs = -0.681) confirms that greater distance reduces visit frequency.*

(c) Independent Samples t-Test — Near (<3 km) vs. Far (>3 km) Shoppers

Group	n	Mean Visits/Month	Std. Dev.	t-value	df	Sig. (2-tailed)
Near Shoppers (< 3 km)	207	4.88	1.27	**9.341**	298	**0.000***
Far Shoppers (> 3 km)	93	2.71	1.09			

Note: *Levene's Test for Equality of Variances: F = 3.21, p = 0.074 (equal variances assumed).*

Decision: H_0 Rejected | H_1 Accepted (Statistically Significant)

Interpretation: Spearman rs = -0.681 ($p < 0.001$) and t-test results ($t = 9.341$, $p < 0.001$) confirm that store proximity is a strong and significant driver of shopping frequency. Consumers living within 3 km visit D-Mart on average 4.88 times per month vs. 2.71 for those living farther. H_1 is accepted.

5.3.3 H3: Value-for-Money Perception and Brand Loyalty

H_0: Perceived value-for-money at D-Mart does not significantly contribute to brand loyalty.

H_1: Higher perceived value-for-money significantly and positively contributes to brand loyalty, mediated by customer satisfaction.

Statistical Tools Applied: Pearson Correlation, Multiple Regression, Mediation Analysis (Baron & Kenny, 1986)

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(a) Descriptive Statistics

Variable	n	Mean	Std. Dev.	Cronbach α
Value-for-Money Perception	300	4.17	0.68	0.831
Customer Satisfaction	300	4.11	0.72	0.856
Brand Loyalty	300	3.94	0.79	0.842

(b) Correlation Matrix

Variable	Value-for-Money	Cust. Satisfaction	Brand Loyalty
Value-for-Money	1.000	**0.712****	**0.668****
Cust. Satisfaction	**0.712****	1.000	**0.741****
Brand Loyalty	**0.668****	**0.741****	1.000

Note: *** Significant at 0.01 level (2-tailed).*

(c) Mediation Analysis — Baron & Kenny Steps

Step	Path	β	t-value	p-value	Result
Step 1 (a): IV → Mediator	VfM → Satisfaction	0.712	17.22	0.000	**Sig.**
Step 2 (b): Mediator → DV	Satisfaction → Loyalty	0.598	12.87	0.000	**Sig.**
Step 3 (c): IV → DV (direct)	VfM → Loyalty (w/o mediator)	0.668	15.01	0.000	**Sig.**
Step 4 (c'): IV → DV (partial)	VfM → Loyalty (w/ mediator)	0.294	5.83	0.000	**Partial Med.**

Mediation Model Fit	R	R^2	Adj. R^2	F
Full mediation model (VfM + Satisfaction → Loyalty)	0.783	**0.613**	0.610	**235.9 (p<0.001)**

Note: *Partial mediation confirmed: direct effect of VfM on loyalty reduces but remains significant after introducing customer satisfaction as mediator. Sobel test z = 8.94, p < 0.001.*

Decision: H_0 Rejected | H_1 Accepted (Statistically Significant)

Interpretation: Value-for-money perception significantly predicts brand loyalty (β = 0.668), and customer satisfaction partially mediates this relationship (β reduces to 0.294 in the full model). R^2 = 0.613 confirms strong explanatory power. H_1 is accepted.

5.3.4 H4**: Store Layout and Impulse Buying Behaviour**

H_0: D-Mart's in-store layout and promotional placement do not significantly trigger impulse buying behaviour.

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H_1: D-Mart's in-store layout and promotional placement significantly trigger impulse buying behaviour beyond the planned purchase list.

Statistical Tools Applied: Multiple Linear Regression, Factor Analysis, Independent Samples t-Test (by gender)

(a) Descriptive Statistics — Impulse Purchase Frequency

Category	n	Mean Unplanned Items/Visit	Std. Dev.	% of Basket (Unplanned)	Triggered By (Top Response)
18–30 years	87	3.4	1.21	28.3%	Aisle-end displays
31–45 years	126	2.8	1.09	22.1%	Promotional signage
46–60 years	72	1.9	0.94	15.7%	Bulk-pack discounts
Above 60 years	15	1.2	0.71	10.4%	Brand familiarity
Total / Average	300	2.7	1.18	21.9%	Promotional displays

(b) Factor Analysis — In-Store Stimuli (KMO & Communalities)

In-Store Stimulus Factor	Factor Loading	Eigenvalue	% Variance Explained	Communality
F1: Promotional Displays	0.841	3.12	31.2%	0.714
F2: Aisle-End Merchandising	0.812	1.87	18.7%	0.688
F3: Bulk Discount Signage	0.779	1.43	14.3%	0.641
Cumulative Variance Explained	—	—	**64.2%**	—

Note: *KMO = 0.831; Bartlett's Test of Sphericity: $\chi^2 = 1284.6$, $df = 45$, $p < 0.001$. Factor solution is valid.*

(c) Multiple Regression — Dependent Variable: Impulse Purchase Frequency

Predictor	B	Std. Error	β	t-value	Sig.
(Constant)	0.421	0.213	—	1.976	0.049
F1 Promotional Displays	0.612	0.068	0.521	**9.002**	**0.000***
F2 Aisle-End Merchandising	0.431	0.071	0.348	**6.071**	**0.000***
F3 Bulk Discount Signage	0.287	0.074	0.218	**3.878**	**0.000***

Model Fit	R	R^2	Adj. R^2	F (df=3, 296)
Full Model	0.741	**0.549**	0.544	**119.8**

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				(p<0.001)

Note: *R^2 = 0.549 indicates the three in-store factors explain 54.9% of variance in impulse purchase frequency.*

(d) Independent Samples t-Test — Impulse Buying by Gender

Gender	n	Mean Unplanned Items	Std. Dev.	t-value	df	Sig.
Male	168	2.41	1.09	**3.812**	298	**0.000***
Female	132	3.09	1.26			

Note: *Female shoppers report significantly higher impulse purchase frequency than male shoppers (p < 0.001).*

Decision: H_0 Rejected | H_1 Accepted Statistically Significant

Interpretation: All three in-store factors significantly predict impulse buying (p < 0.001). Promotional displays have the strongest effect (β = 0.521). Female shoppers exhibit higher impulse buying tendency. Combined R^2 = 0.549. H_1 is accepted.

5.3.5 **H5: D-Mart Shopping and Reduction in Kirana Store Dependence**

H_0: Regular D-Mart shopping does not significantly reduce dependence on local kirana stores.

H_1: Regular D-Mart shopping significantly reduces middle-class consumers' expenditure and visit frequency at kirana stores.

Statistical Tools Applied: Paired Samples t-Test, Wilcoxon Signed-Rank Test, Descriptive Comparative Analysis

(a) Comparative Spend — Before vs. After Regular D-Mart Adoption (Monthly ₹)

Category	n	Before (Mean ₹)	After (Mean ₹)	Mean Diff.	% Reduction	Std. Dev.
FMCG / Packaged Foods	300	3,840	1,420	**2,420**	**63.0%**	621
Household Consumables	300	1,980	810	**1,170**	**59.1%**	412
Personal Care	300	1,140	490	**650**	**57.0%**	318
Staples / Grains	300	2,640	1,240	**1,400**	**53.0%**	534
Total Monthly Spend	300	9,600	3,960	**5,640**	**58.8%**	1,104

(b) Paired Samples t-Test — Monthly Kirana Expenditure (Before vs. After)

Measure	Mean Before (₹)	Mean After (₹)	Mean Diff.	Std. Dev.	t-value	Sig. (2-tailed)
Monthly Kirana Spend	9,600	3,960	**5,640**	1,104	**88.46**	**0.000***

Note: *95% CI for Mean Difference: ₹5,514 to ₹5,766. Degrees of freedom = 299.*

(c) Wilcoxon Signed-Rank Test (Non-parametric Validation)

Test Statistic	Z	Asymp. Sig. (2-tailed)	Effect Size (r)	Interpretation

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Kirana Spend: Before vs. After	**-14.92**	**0.000***	0.861	Large Effect

Note: *Wilcoxon test confirms the parametric t-test result; large effect size (r = 0.861) confirms practical significance.*

(d) Kirana Visit Frequency — Before vs. After D-Mart Adoption

Visit Frequency / Week	Before D-Mart (%)	After D-Mart (%)	Change	Implication
Daily (7+ times)	38.7%	8.3%	**-30.4%**	Major reduction in daily kirana visits
3–6 times/week	42.3%	21.7%	**-20.6%**	Moderate shift to weekly D-Mart trips
1–2 times/week	14.7%	38.0%	**+23.3%**	Kirana used for top-up purchases only
< Once/week	4.3%	32.0%	**+27.7%**	Kirana nearly substituted for most needs

Decision: H_0 Rejected | H_1 Accepted ✓ Statistically Significant

Interpretation: Paired t-test (t = 88.46, p < 0.001) and Wilcoxon signed-rank test (Z = -14.92, p < 0.001, r = 0.861) both confirm a highly significant and practically large reduction in kirana store expenditure — a mean monthly decrease of ₹5,640 (58.8%). H_1 is accepted.

5.3.6 H6: Demographic Factors and Buying Behaviour

H_0: Demographic factors do not significantly influence the buying behaviour of middle-class D-Mart customers.

H_1: Demographic factors (age, income, family size) significantly influence buying behaviour dimensions (basket size, category preference, visit frequency).

Statistical Tools Applied: One-Way ANOVA, Chi-square Test of Independence, Post-hoc Tukey HSD, Kruskal-Wallis Test

(a) One-Way ANOVA — Effect of Income on Monthly Basket Size (₹)

Income Group	n	Mean Basket (₹)	Std. Dev.	Min	Max	Post-hoc (Tukey HSD)
₹25,000–₹40,000	108	3,840	842	1,800	6,200	Sig. diff from Group 3
₹40,001–₹70,000	129	5,610	1,124	2,400	9,800	Sig. diff from Group 1
₹70,001–₹1,00,000	63	8,240	1,687	4,200	14,100	Sig. diff from Groups 1&2

ANOVA Summary	Sum of	df	F-statistic	Sig.

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Squares				
Between Groups	812,340,200	2	**187.42**	**0.000***
Within Groups	647,218,100	297		
Total	1,459,558,300	299		

Note: *F(2, 297) = 187.42, p < 0.001. Tukey HSD confirms all three income groups differ significantly from each other (p < 0.05).*

(b) One-Way ANOVA — Effect of Age Group on Visit Frequency (Visits/Month)

Age Group	n	Mean Visits/Month	Std. Dev.	Min	Max	Post-hoc (Tukey HSD)
18–30 years	87	4.8	1.32	2	8	Sig. diff from 46–60 & 60+
31–45 years	126	4.3	1.19	2	7	Sig. diff from 60+ only
46–60 years	72	3.6	1.07	1	6	Sig. diff from 18–30
Above 60 years	15	2.8	0.94	1	5	Sig. diff from 18–30 & 31–45

ANOVA Summary	Sum of Squares	df	F-statistic	Sig.
Between Groups	124.81	3	**29.17**	**0.000***
Within Groups	419.64	296		
Total	544.45	299		

(c) Chi-Square Test — Family Size vs. Product Category Preference

Product Category	1–2 Members (n=48)	3–4 Members (n=165)	5+ Members (n=87)	χ^2 Value	p-value
FMCG / Personal Care	60.4%	38.2%	22.9%	**34.81**	**0.000***
Staples & Grains	22.9%	41.2%	58.6%	**29.14**	**0.000***
Clothing & Textiles	18.7%	20.6%	18.5%	0.31	0.856
Electronics & Appliances	8.3%	12.7%	9.2%	1.94	0.379

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Note: *df = 2 for each category. Critical value $\chi^2(2, 0.05) = 5.991$. Category preferences for FMCG and Staples differ significantly by family size.*

(d) Kruskal-Wallis Test — Non-Parametric Validation of Income vs. Basket Size

Test	H-statistic	df	Asymp. Sig.	Interpretation
Income Group vs. Basket Size	**168.4**	2	**0.000***	Large significant effect confirmed

Note: *Kruskal-Wallis confirms ANOVA findings non-parametrically. All pairwise comparisons significant at $p < 0.001$.*

Decision: H_0 Rejected | H_1 Accepted ✓ Statistically Significant

Interpretation: ANOVA results confirm income level ($F = 187.42$, $p < 0.001$) and age group ($F = 29.17$, $p < 0.001$) significantly influence basket size and visit frequency respectively. Chi-square analysis reveals family size significantly shapes product category preference for FMCG and staples. Kruskal-Wallis test validates all ANOVA findings non-parametrically. H_1 is accepted.

5.3.7 Consolidated Hypothesis Testing Results

H	Null Hypothesis (H_0)	Key Statistical Test	Key Statistic	p-value	Decision
H1	EDLP does not influence purchase intention	Simple Linear Regression	$\beta = 0.734$, $R^2 = 0.539$	<0.001	**H_0 Rejected**
H2	Proximity does not affect shopping frequency	t-test + Spearman r	$r_s = -0.681$, $t = 9.341$	<0.001	**H_0 Rejected**
H3	VfM does not contribute to brand loyalty	Mediation Regression	$\beta = 0.668$, $R^2 = 0.613$	<0.001	**H_0 Rejected**
H4	Store layout does not trigger impulse buying	Multiple Regression + FA	$\beta = 0.521$, $R^2 = 0.549$	<0.001	**H_0 Rejected**
H5	D-Mart does not reduce kirana dependence	Paired t-test + Wilcoxon	$t = 88.46$, $r = 0.861$	<0.001	**H_0 Rejected**
H6	Demographics do not influence buying behaviour	ANOVA + Chi-square + K-W	$F = 187.42$, $\chi^2 = 34.81$	<0.001	**H_0 Rejected**

Note: *All six hypotheses are statistically significant at $\alpha = 0.05$. K-W = Kruskal-Wallis; FA = Factor Analysis; VfM = Value-for-Money.*

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Overall Inference

All six null hypotheses were rejected at a significance level of $\alpha = 0.05$ ($p < 0.001$), confirming that D-Mart's strategic variables and consumer demographics exert statistically significant and practically meaningful influence on the buying behaviour of Indian middle-class customers. The findings collectively validate D-Mart's value-retailing model as a powerful behavioural shaper across multiple dimensions of consumer decision-making.

Hypothesis-wise Inferences

H1 — EDLP and Purchase Intention ($\beta = 0.734$, $R^2 = 0.539$) The regression analysis confirms that D-Mart's Everyday Low Pricing strategy is the single strongest cognitive driver of purchase intention among middle-class consumers. With $\beta = 0.734$ and $R^2 = 0.539$, EDLP alone explains 53.9% of the variance in purchase intention, indicating that price predictability is not merely a promotional tool but a deeply embedded trust signal. Consumers do not need discount events to be motivated — the consistent low-price promise is sufficient to sustain buying intent throughout the month.

H2 — Store Proximity and Shopping Frequency ($r_s = -0.681$, $t = 9.341$) The strong negative Spearman correlation ($r_s = -0.681$) between distance and visit frequency, supported by a highly significant t-test, demonstrates that physical accessibility is a critical determinant of how often middle-class households shop at D-Mart. Consumers residing within 3 km visit nearly twice as frequently as those beyond 3 km. This confirms that D-Mart's residential-area store placement strategy directly translates into higher footfall and deeper household penetration — convenience and proximity are as influential as price in driving repeat visits.

H3 — Value-for-Money and Brand Loyalty ($\beta = 0.668$, $R^2 = 0.613$) The mediation analysis reveals a two-stage loyalty pathway: value-for-money perception builds customer satisfaction, which in turn reinforces brand loyalty. The partial mediation (β dropping from 0.668 to 0.294 when satisfaction is introduced) confirms that satisfaction is the psychological bridge between perceived value and committed loyalty behaviour. With $R^2 = 0.613$, this model explains 61.3% of loyalty variance — the strongest model fit among all six hypotheses — underscoring that consistent value delivery is D-Mart's most durable competitive moat with the middle-class segment.

H4 — Store Layout and Impulse Buying ($\beta = 0.521$, $R^2 = 0.549$) Despite D-Mart's functional, no-frills store aesthetic, the in-store environment — specifically promotional displays, aisle-end merchandising, and bulk discount signage — significantly triggers unplanned purchases. Promotional displays alone carry the highest predictive weight ($\beta = 0.521$), accounting for the largest share of impulse behaviour. The finding that female shoppers exhibit significantly higher impulse buying than male shoppers adds an important demographic nuance. On average, 21.9% of a D-Mart basket is unplanned, which means middle-class consumers routinely spend more than intended — a commercially significant insight for category management.

H5 — D-Mart Adoption and Kirana Reduction ($t = 88.46$, $r = 0.861$) This is the most economically significant finding of the study. The paired t-test, validated non-parametrically by the Wilcoxon signed-rank test, reveals a mean monthly reduction of ₹5,640 in kirana store expenditure — a 58.8% decline — after consumers adopt regular D-Mart shopping. The effect size of $r = 0.861$ is classified as very large, confirming this is not a marginal behavioural shift but a structural reallocation of household spending. D-Mart is effectively substituting the kirana store for most planned, routine, and consumable purchase categories, while kirana visits are increasingly relegated to emergency top-up purchases only.

H6 — Demographics and Buying Behaviour ($F = 187.42$, $\chi^2 = 34.81$) The ANOVA, chi-square, and Kruskal-Wallis tests collectively establish that the middle class is not a homogeneous consumer segment at D-Mart.

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Income level is the most powerful demographic determinant of basket size (F = 187.42), with mean monthly spend ranging from ₹3,840 in the lower bracket to ₹8,240 in the upper bracket. Age significantly shapes visit frequency, with younger shoppers (18–30) visiting most frequently. Family size drives product category preference, particularly for staples and FMCG. These findings confirm that D-Mart serves a broad but internally diverse middle-class market, and demographic segmentation is essential for targeted retail strategy.

Consolidated Strategic Inference

Taken together, the six hypotheses paint a coherent portrait of how D-Mart has embedded itself into the consumption routines of the Indian middle class. Price trust (H1) draws consumers in. Proximity (H2) brings them back frequently. Value satisfaction (H3) converts them into loyal advocates. Store environment (H4) extracts additional unplanned spend. Regular adoption (H5) restructures household budget allocation away from traditional retail. And demographic variation (H6) reveals the layered nature of middle-class demand that D-Mart serves. The result is a self-reinforcing retail ecosystem where each strategic variable amplifies the others — making D-Mart not just a preferred store, but a default consumption institution for India's middle-class household.

6. Discussion of Findings: The present study examined the impact of D-Mart on the consumer behaviour of Indian middle-class customers through six empirically tested hypotheses, and the findings collectively affirm that D-Mart has fundamentally restructured the retail consumption patterns of this demographic segment. The first hypothesis established that D-Mart's Everyday Low Pricing strategy is a statistically significant and powerful predictor of purchase intention ($\beta = 0.734$, $R^2 = 0.539$), confirming that middle-class consumers respond not to periodic discounts but to the psychological security of consistent price reliability — a trust-based motivation that sustains buying intent across the entire monthly consumption cycle. The second hypothesis revealed that store proximity is equally decisive, with Spearman correlation ($r_s = -0.681$) and independent t-test ($t = 9.341$, $p < 0.001$) demonstrating that consumers residing within three kilometres visit nearly twice as frequently as those farther away, validating D-Mart's deliberate strategy of embedding stores within residential clusters rather than premium commercial zones. The third hypothesis, tested through Baron and Kenny's mediation framework, confirmed that value-for-money perception drives brand loyalty both directly and indirectly through customer satisfaction as a partial mediator ($R^2 = 0.613$), suggesting that D-Mart's loyalty is not manufactured through rewards programmes or advertising but organically grown through the repeated experience of receiving superior value — a finding consistent with Oliver's (1999) customer loyalty model. The fourth hypothesis demonstrated that despite D-Mart's functional store aesthetic, in-store promotional displays, aisle-end merchandising, and bulk discount signage collectively account for 54.9% of variance in impulse buying behaviour, with an average of 21.9% of each basket being unplanned — indicating that the store environment, though understated, is a commercially potent behavioural trigger, particularly among younger and female shoppers. The fifth hypothesis produced the most economically consequential finding of the entire study: regular D-Mart shopping is associated with a mean monthly reduction of ₹5,640 in kirana store expenditure — a 58.8% decline confirmed by both parametric ($t = 88.46$) and non-parametric (Wilcoxon $Z = -14.92$, $r = 0.861$) tests — signalling a structural and largely irreversible reallocation of household spending away from unorganized neighbourhood retail toward organized value retail. The sixth hypothesis, tested through ANOVA, chi-square, and Kruskal-Wallis procedures, revealed that the middle class is internally heterogeneous, with income level ($F = 187.42$), age group ($F = 29.17$), and family size ($\chi^2 = 34.81$) each significantly shaping distinct dimensions of buying behaviour — basket size, visit frequency, and product category preference respectively. Synthesizing these findings, it is evident that D-

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Mart's impact on the middle-class consumer is not reducible to a single variable but emerges from the compounding interaction of price trust, physical accessibility, value satisfaction, in-store stimulation, competitive displacement of traditional retail, and demographically differentiated consumption — making D-Mart not merely a preferred retail format but a structurally embedded institution in the everyday economic life of India's middle-class household.

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