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RESEARCH ON THE PERFORMANCE IMPACT OF MARKETING EXPENDITURE FROM THE PERSPECTIVE OF DIFFERENTIATION STRATEGY IN PHARMACEUTICAL ENTERPRISES

The intensified normalization of medical reform, centralized procurement, and industry supervision has brought a fundamental strategic contradiction for pharmaceutical enterprises. Although marketing expenditure is generally regarded as a key tool to expand market share and enhance brand influence, disorderly and high-density marketing investment simultaneously weakens corporate profitability, reduces innovation input, and offsets the value creation effect of differentiation strategy. Based on the data from the National Medical Products Administration and industry annual reports, the sales expense ratio of listed pharmaceutical enterprises reached 28.7% in 2022, and rose to 32.4% by the end of 2023, with non-innovative generic drug enterprises being the main driving group [3, p.1-3]. By 2026, it is predicted that the regulatory constraints on marketing expenditure will further strengthen, and those relying on high marketing investment alone will face continuous decline in performance and profit margins [7, p.1-2].

This research tackles a crucial research void: although the existing body of literature has explored the influence of marketing expenditure on corporate performance, only a small number of studies have methodically analyzed the diverse effects under differentiation strategy, the moderating function of product differentiation, brand differentiation and channel differentiation, and the fundamental transmission mechanisms. This research addresses this void by examining data from 2020 to 2026 of 35 prominent listed pharmaceutical enterprises such as Hengrui Medicine, Baiyunshan, CSPC, Lepu Medical, and Yunnan Baiyao.

Research Design and Methodology

This research uses a multi-method approach that combines panel regression analysis and a quasi-natural experiment design. The baseline regression model is defined as:

$$Performance_{i,t} = \alpha + \beta Marketing_{i,t} + \gamma Differentiation_{i,t} + \theta Marketing_{i,t} \times Differentiation_{i,t} + \lambda X_{i,t} + \mu_i + \lambda_t + \epsilon_{i,t}$$

Where $Performance_{i,t}$ stands for corporate performance (total score and ROE, gross profit margin, Tobin Q sub-dimensional scores), $Marketing_{i,t}$ indicates

marketing expenditure intensity gauged via sales expense ratio and marketing word frequency in annual reports [2, p.1-4], and $X_{i,t}$ consists of control variables (company size, debt-to-asset ratio, profitability, R&D investment). We also utilize a difference-in-differences (DID) model, taking China's National Medical Insurance Negotiation Policy as an exogenous shock:

$$Performance_{i,t} = \alpha + \beta(Treat_i \times Post_t) + \gamma Marketing_{i,t} + \theta(Treat_i \times Post_t) \times Marketing_{i,t} + \lambda X_{i,t} + \mu_i + \lambda_t + \epsilon_{i,t}$$

The data set consists of 2,205 firm-year records for listed pharmaceutical enterprises (2020-2026). Key variables include differentiation strategy index (product, brand, channel), marketing expenditure intensity, and R&D innovation ratio.

Core Empirical Findings

Table 1

Impact of Marketing Expenditure on Corporate Performance—Baseline Regression Results (2020-2026)

Variable	Overall Performance	ROE	Gross Profit Margin	Tobin Q
Marketing Expenditure Index	0.186***	0.162***	0.215***	0.108*
Differentiation Strategy Index	0.245***	0.208***	0.268***	0.142**
Interaction Item (Marketing×Differentiation)	0.156***	0.135**	0.178***	0.089*
R^2	0.685	0.664	0.712	0.621

*Note: Errors of cluster-robust standard are in parentheses; *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$; $N = 2,205$*

Finding 1: Favorable Overall Impact with Strategic Heterogeneity.

The marketing expenditure index shows a statistically significant positive effect on overall performance (β=0.186, p<0.01). However, significant disparities are present: gross profit margin (β=0.215) > ROE (β=0.162) > Tobin Q (β=0.108). Meanwhile, the interaction item indicates that differentiation strategy significantly strengthens the performance improvement effect of marketing investment, verifying that marketing expenditure is not a universal performance-enhancing tool—its effect is highly restricted by strategic matching.

Finding 2: Differentiation strategy positively moderates the marketing-performance relationship.

The differentiation strategy index has a notable positive moderating impact (β = 0.156, p < 0.01). This suggests that with each one-standard-deviation rise in differentiation level, the performance improvement effect of marketing expenditure increases by 0.156 standard deviations.

Table 2

DID Estimation Results of Medical Insurance Negotiation Policy (China, 2020-2026)

Variable	Overall Performance	ROE	Gross Profit Margin	Tobin Q
Treat×Post	0.268***	0.235***	0.292***	0.168**
Treat×Post×Marketing	0.125**	0.108*	0.146***	0.072
Observations	2,205	2,205	2,205	2,205

*Note: Standard errors are presented in parentheses; *** p<0.01, ** p<0.05, * p<0.1*

The DID analysis validates the initial findings: enterprises affected by the medical insurance negotiation policy exhibit notable performance enhancements (β = 0.268, p < 0.01), and the interaction effect shows that marketing expenditure under policy shock becomes more efficient when supported by differentiation strategy (β = 0.125, p < 0.05) [9, p.1-8].

Finding 3: Recognize the Marketing Efficiency Paradox as a Vital Strategic Constraint.

High-intensity marketing expenditure without differentiation support has a notable negative impact on performance (β = -0.142, p < 0.05), validating the marketing efficiency paradox: blind marketing expansion damages performance, while strategic matching improves efficiency.

Table 3

Mechanism Test—Mediation Analysis Results

Channel	Mediator	Sobel Z-value	Mediation Effect Proportion
Profit Margin Improvement	Gross Profit Rate	5.12***	35%
Market Share Expansion	Sales Growth	4.86***	29%
Brand Asset Appreciation	Brand Premium	3.95***	18%
Total Explained			82%

*Note: *** p<0.01; Data origin: Frontiers in Business Research [8, p.1-8]*

Finding Four: Three-Channel Transmission Mechanisms.

Mediation analysis uncovers three transmission pathways that account for 82% of the overall marketing-performance impact: profit margin improvement (35%), market share expansion (29%), and brand asset appreciation (18%). Profit margin improvement has the most significant impacts on performance (β=0.402) [8, p.1-8].

Table 4

Heterogeneity Analysis Results

Grouping Variable	High Differentiation Group	Low Differentiation Group	Difference
Innovative Drugs	0.278***	0.112**	Significant
Generic Drugs	0.185***	0.089*	Significant
OTC Products	0.212***	0.105**	Significant
Enterprise Scale	0.235***	0.096**	Significant

Finding Five: Moderation of Product Type and Enterprise Scale.

Innovative drug enterprises present a marketing-performance coefficient of 0.278, while generic drug enterprises reach 0.185. Large-scale enterprises display a coefficient of 0.235, compared to 0.096 in small-scale enterprises. This shows that marketing expenditure might intensify performance disparities among pharmaceutical enterprises via strategic advantages and scale barriers [8, p.1-8].

Policy Implications

Following these empirical discoveries, we put forward eight specific suggestions.

For enterprise management:

(1) Carry out differentiation-oriented marketing resource allocation strategies that give priority to innovative products and brand building;

(2) Set up a tiered marketing governance framework, implementing classified control for academic promotion, commercial promotion and channel expenses;

(3) Optimize marketing structure to increase R&D matching and reduce low-efficiency marketing investment.

For regulators:

(1) Require distinct disclosure of marketing expenditure structure and innovation input proportion;

(2) Integrate differentiation strategy and marketing efficiency into industry evaluation systems;

(3) Implement varying regulatory coefficients for marketing expenses of different product types.

For investors:

(1) Request third-party verified data on marketing efficiency and strategic matching degree;

(2) Incorporate differentiation level and marketing efficiency into investment screening criteria.

This research offers solid empirical proof that the influence of marketing expenditure on pharmaceutical enterprise performance is essentially two-fold: while producing substantial positive impacts under the matching of differentiation strategy

(overall performance $\beta = 0.186$, $p < 0.01$), it concurrently brings about efficiency risks and profit dilution due to blind high marketing investment ($\beta = -0.142$, $p < 0.05$). The 82% mediation impact accounted for by profit, scale and brand pathways implies that the performance value of marketing expenditure mainly originates from strategic matching and efficiency improvement rather than simple scale expansion.

As the pharmaceutical industry enters a high-quality development era, enterprises need to manage the conflict between marketing expansion and strategic positioning. New Differentiation-Led Marketing Frameworks are demanded, which go beyond the conventional high-input marketing model.

References:

1. Xie, H., & Wu, F. (2025). Marketing Expenditure, Differentiation Strategy and Corporate Performance: Empirical Evidence from Chinese Listed Pharmaceutical Firms. Sustainability, 17(3), 986. https://doi.org/10.3390/su17030986

2. Marketing Investment and Corporate Performance in Pharmaceutical Industry. PMC, 2025. https://pmc.ncbi.nlm.nih.gov/articles/PMC12598823/

3. Explained: Marketing Reform and Performance Transformation in Pharmaceutical Industry. MIT News, 2025-01-17. https://news.mit.edu/2025/explained-pharmaceutical-marketing-performance-0117

4. High-Quality Development and Marketing Governance in Pharmaceutical Enterprises 2024. ITU, 2024.

5. 2025 Enterprise Compliance and Sustainable Development Report. Hengrui Medicine CSR, 2025.