

SYNOPSIS

Submitted to



The IIHMR University, Jaipur

for the partial fulfillment for the award of the degree of

Master of Business Administration (MBA)

in

Healthcare Analytics

by

Patil Smit Rajendra

Under the Supervision and Guidance of

Dr. Kumar Parimal Shrestha

2026

RESEARCH SYNOPSIS

*Submitted in Partial Fulfilment of the Requirements for the
MBA — Healthcare Analytics*

AI-Driven Indian Pharmaceutical Market Analysis and Competitive Benchmarking Using IMS Data

Submitted by

Smit Rajendra Patil

Under the Supervision and Guidance of

Dr. Kumar Parimal Shrestha

The IIHMR University, Jaipur

1. Title of the Study

"AI-Driven Indian Pharmaceutical Market Analysis and Competitive Benchmarking Using IMS Data"

This study examines structural trends, competitive dynamics, and growth patterns within the Indian Pharmaceutical Market (IPM) between September 2021 and September 2025, using IQVIA's IMS Market Analysis and Transaction (MAT) data. The analysis integrates company-level, brand-level, molecule-level, and therapeutic-group-level dimensions within a single Python-based analytical framework, with ALKEM Laboratories used as a focused competitive benchmarking case.

2. Research Questions

The study is organised around the following central research questions, each of which corresponds to a specific objective and analytical output:

1. How have market share and growth patterns evolved among the leading pharmaceutical companies in India between MAT September 2021 and MAT September 2025, and which companies have gained or lost share?
2. How consistent is year-on-year growth across pharmaceutical companies, and can this consistency be reliably scored and compared?
3. How does ALKEM Laboratories' market performance compare with that of its peer/benchmark companies?
4. Is the observed market growth predominantly driven by price increases or by volume expansion?
5. How has the composition of the market shifted between acute and chronic therapy segments over the study period?
6. How diversified are the portfolios of major pharmaceutical companies, and how does this relate to growth performance?
7. How does competitive intensity vary across different therapeutic groups, and where do strategic "white-space" opportunities exist?
8. Which molecules and emerging brands demonstrate the highest growth potential combined with relatively low competitive saturation?

3. Objectives of the Study

1. To examine the market share and growth of leading pharmaceutical companies based on IMS MAT data (September 2021 – September 2025), and to determine market share gainers and losers among the largest companies during the study period.
2. To evaluate and compare the consistency of growth of pharmaceutical companies using a structured scoring approach.
3. To conduct competitive benchmarking of ALKEM Laboratories against other benchmark companies in the market.
4. To determine whether company growth is driven primarily through price growth or through volume expansion.
5. To review the shift in therapy segment composition between acute and chronic disease categories.
6. To assess the portfolio diversity of major pharmaceutical companies.

7. To compare the level of competitive intensity across therapeutic groups and identify strategic opportunity areas.
8. To identify new and emerging molecules and brands that demonstrate high growth potential.

4. Hypotheses

Five hypotheses were formulated and tested against the IMS MAT dataset, each linked to a corresponding research objective:

#	Null Hypothesis (H0)	Decision (Based on Findings)
H1	There is no significant difference between the market share held by Indian companies and that held by multinational corporations (MNCs).	Rejected — a significant difference was found (Indian companies ~73% vs. MNCs ~27%).
H2	There is no significant difference in growth between the acute and chronic therapy segments.	Rejected — chronic segment growth (~32–35%) significantly exceeds acute segment growth (~22–25%).
H3	Market growth is not significantly driven by pricing factors.	Rejected — approximately 60–65% of companies, especially larger ones, show predominantly price-led growth.
H4	There is no correlation between portfolio diversification and growth consistency.	Rejected — Highly Diversified companies (Diversity Score ≥ 70) show a 90%+ likelihood of achieving the maximum Consistency Score of 4.
H5	ALKEM Laboratories shows no significantly different growth or consistency compared to its peer companies.	Partially Rejected — ALKEM shows consistent positive growth in all three years (Consistency Score 4/4), but its overall growth (18.1%) is below the peer average (24–26%).

All hypotheses are stated in the null form and tested against the alternative that a significant difference or association exists, consistent with the descriptive-analytical design of the study.

5. Research Methodology

5.1 Research Design

The study adopts a quantitative, descriptive-analytical research design. Secondary data from IMS MAT reports was evaluated using statistical and data-analytics approaches to produce competitive intelligence insights for the Indian pharmaceutical business. The use of a longitudinal dataset spanning five MAT periods enabled both cross-sectional evaluation and trend-based analysis over time.

5.2 Data Source

The primary data source is secondary data obtained from IMS (IQVIA) MAT reports covering September 2021 to September 2025. The dataset includes 1,11,285 brand-level records across 1,154 companies, comprising value sales data (MAT INR Crores), unit sales, and quantity data. The analysis is conducted at the company, brand, molecule, and therapeutic-group level. The scope is limited to the ethical/retail market segment as captured by IMS audit practice; IMS audit coverage does not extend to OTC, hospital-only, or unaudited markets.

5.3 Data Cleaning and Preparation

- Records missing key identifiers (e.g., molecule description, Plain/Combination classification) were removed to preserve analytical consistency.
- Column names were stripped of leading/trailing whitespace to prevent silent merge or groupby failures.
- Company name variants (including IMS classification suffixes) were standardised to prevent duplicate groupings of the same company.
- MAT column names were verified to catch invisible whitespace or encoding inconsistencies prior to aggregation.

5.4 Analytical Framework

The analytical process was organised into five structured stages: data collection, data cleaning, KPI computation, multi-level analysis (company / brand / molecule / therapeutic group), and visualisation. Nine structured analytical approaches were applied within this framework, focusing on: market share movement, growth consistency, ALKEM Laboratories benchmarking, price-versus-volume contribution analysis, acute-to-chronic therapy transition, portfolio diversity assessment, competitive intensity evaluation, molecule opportunity identification, and emerging brand analysis.

5.5 Key Performance Indicators (KPIs)

KPI	Formula / Basis
Year-on-Year (YoY) Growth Rate	$(\text{MAT Current} - \text{MAT Previous}) / \text{MAT Previous} \times 100$
Compound Annual Growth Rate (CAGR)	$[(\text{MAT 2025} / \text{MAT 2022})^{(1/3)} - 1] \times 100$
Growth Consistency Score	0–4 score based on the number of years a company posted positive YoY growth, with a bonus point for positive growth in all three years.
Portfolio Diversity Score	0–100 composite score (MinMaxScaler-normalised) across four portfolio dimensions: unique therapeutic groups, subgroups, molecules, and SBUs.

5.6 Tools and Software

- Python 3.11 (Anaconda distribution)
- pandas and numpy — data manipulation and aggregation
- matplotlib and seaborn — data visualisation
- scikit-learn (MinMaxScaler) — normalisation for composite scoring
- Jupyter Notebook — analysis environment

6. Data Analysis Plan

The analysis plan follows a multi-level, sequential structure moving from descriptive market overview to deep comparative and benchmarking analysis:

6.1 Stage 1 — Descriptive Market Overview

- Overall IPM value trend and YoY/CAGR computation (MAT 2021–2025).

- Top 15 companies, therapeutic groups, molecules, and subgroups by MAT sales.
- Indian companies vs. MNC market share comparison.
- Acute vs. chronic therapy segment comparison.

6.2 Stage 2 — Comparative and Structural Analysis

- Market concentration analysis (Top 10 vs. rest of market).
- Growth vs. market size positioning matrix (company-level).
- SBU-wise performance analysis and Plain vs. Combination formulation analysis.
- Company-level CAGR analysis and market growth contribution analysis.

6.3 Stage 3 — Deep Analytical Modules

- Market share gainers vs. losers analysis (2022 → 2025).
- Growth Consistency Score computation and classification across all 1,154 companies.
- ALKEM Laboratories competitive benchmarking against peer companies.
- Price vs. volume growth-driver classification.
- Acute-to-chronic market shift analysis (2021–2025).
- Portfolio Diversity Index computation and its association with growth consistency.
- Competitive Intensity Index across therapeutic groups, identifying low-competition/high-growth "white-space" opportunities.
- Molecule Opportunity Score — combining growth rate, competitive openness, and revenue-per-brand to flag "Star" molecule opportunities.

6.4 Stage 4 — Hypothesis Testing and Synthesis

Findings from each analytical module are consolidated and evaluated against the five formulated hypotheses (Section 4), benchmarked against existing literature, and translated into strategic implications for the Indian pharmaceutical industry generally and for ALKEM Laboratories specifically.

7. Ethical Considerations

- **Secondary, non-human-subject data:** The study relies entirely on commercially available IMS MAT data accessed through authorised institutional access routes. No primary data collection involving human subjects was undertaken at any stage of the research.
- **Use of public company and brand information:** All company and brand names referenced in the study are already publicly available and are used strictly for academic and analytical purposes; no proprietary or confidential business information is disclosed beyond what IMS itself reports publicly to the industry.
- **Authorised and licensed data access:** Data was obtained through the institution's authorised licensing arrangement for IMS/IQVIA data, ensuring compliance with the data provider's terms of use.
- **Objectivity and non-manipulation of findings:** All KPIs, scores, and classifications were computed using transparent, pre-defined formulas (Section 5.5) applied uniformly across the dataset, minimising subjective bias in company rankings and benchmarking outcomes.

- **Acknowledgement of data scope limitations:** The study transparently discloses that IMS audit coverage excludes OTC, hospital-only, and unaudited market segments, ensuring findings are not misrepresented as covering the entire pharmaceutical market.

8. Implications of the Research

8.1 Academic / Methodological Implications

- Demonstrates a replicable, integrated analytical framework that combines company-, brand-, molecule-, and therapy-level analysis within a single longitudinal study — addressing a gap in existing literature, which tends to examine these dimensions in isolation.
- Introduces four original composite KPIs (Growth Consistency Score, Portfolio Diversity Score, Competitive Intensity Index, and Molecule Opportunity Score) that can be reused or adapted in future pharmaceutical market research.
- Provides a reproducible Python-based methodology that can be re-applied to future MAT periods or extended to other geographic markets with minimal modification.

8.2 Industry / Practical Implications

- For the Indian pharmaceutical industry broadly: structural trends will increasingly reward companies with strong chronic-therapy presence; competitive intensity mapping should become a standard input into portfolio planning to identify strategic white-space opportunities.
- For ALKEM Laboratories specifically: (1) conduct a detailed portfolio audit to quantify the acute-vs-chronic revenue mix; (2) use the molecule opportunity analysis to prioritise development of "Star" and high-growth molecules; (3) leverage the Consistency Score of 4/4 as a brand-positioning and investor-communication asset; (4) benchmark price realisation for key brands against competitive peers.
- Supports practical business decision-making in portfolio management, market-entry evaluation, brand investment planning, and therapy-area prioritisation across the broader industry.

8.3 Policy / Strategic Implications

- Highlights the growing strategic importance of chronic disease management therapies in India, relevant to healthcare policy planning around access and affordability for long-term conditions.
- Surfaces evidence on price-led vs. volume-led growth patterns that may be relevant to discussions on pharmaceutical pricing regulation (e.g., DPCO) and its differential impact on large vs. small companies.

8.4 Limitations to Bear in Mind When Interpreting Implications

- Findings are based on the ethical/retail IMS-audited market only and exclude hospital, OTC, and unaudited segments.
- Price-volume decomposition is derived indirectly from value and unit sales rather than exact MRP data.
- The study period (2021–2025) includes post-COVID recovery effects that may partially influence early-period growth figures.