Challenges Faced by The Indian Pharmaceutical Companies in Implementing and Executing Strategic Management Practices

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Abstract— This study investigates the challenges faced by Indian pharmaceutical companies in implementing and executing strategic management practices. Through a comprehensive analysis of demographic factors, reliability assessment, and chi-square analysis, ten key challenges are identified and examined. These challenges include regulatory compliance, intellectual property rights (IPR), rapid technological changes, price controls and margin pressure, quality control and assurance, supply chain management, market access and distribution challenges, research and development (R&D) and innovation, talent management, and competitive pressures. Findings reveal significant disparities in gender distribution, age demographics, and company representation within the workforce. Furthermore, reliability analysis highlights inconsistencies in perceptions across different challenges. while chi-square analysis identifies varying levels of association between challenges and strategic management practices. The study underscores the importance of addressing these challenges to enhance competitiveness, innovation, and sustainability within the Indian pharmaceutical industry. Recommendations are provided to guide industry stakeholders in developing targeted interventions and strategies to overcome these challenges effectively and foster long-term growth and success.

Index Terms- Pharmaceutical Industry, Strategic Management, Challenges, Indian Companies Demographic Analysis

I. INTRODUCTION

In recent years, the Indian pharmaceutical industry has witnessed remarkable growth and transformation, emerging as a global leader in the production and export of generic drugs. However, amidst this rapid expansion, Indian pharmaceutical companies encounter a myriad of challenges in implementing and executing strategic management practices effectively. This introduction sets the stage to delve into the

multifaceted nature of these challenges and their implications for the industry. From demographic disparities within the workforce to regulatory compliance hurdles, from market volatility to technological disruptions, Indian pharmaceutical companies navigate a complex landscape fraught with strategic management complexities. Understanding and addressing these challenges are paramount for companies seeking to sustain growth, enhance competitiveness, and navigate the evolving dynamics of the global pharmaceutical market. In this study, we aim to comprehensively analyze the challenges faced by Indian pharmaceutical companies in strategic management, employing demographic analysis, reliability assessment, and chi-square analysis to provide actionable insights and recommendations for industry stakeholders. By shedding light on these challenges, this study endeavours to contribute to the advancement of knowledge and the enhancement of strategic management practices within the Indian pharmaceutical industry.

Challenges Faced by The Indian Pharmaceutical Companies in Implementing and Executing Strategic Management Practices

Regulatory Compliance: Indian pharmaceutical companies operate in a highly regulated environment, necessitating strict adherence to regulatory standards set by authorities such as the Central Drugs Standard Control Organization (CDSCO) and international regulatory bodies. Compliance with these regulations is paramount to ensure product quality, safety, and efficacy, as well as to maintain market access and reputation. Challenges in regulatory compliance may arise due to evolving regulations, complex approval

- processes, and the need for continuous monitoring and adaptation to changing requirements.
- Intellectual Property Rights (IPR): Intellectual property rights (IPR) play a crucial role in the pharmaceutical industry, where innovations and discoveries drive competitiveness and growth. However, Indian pharmaceutical companies often face challenges related to intellectual property protection, including patent infringement issues, regulatory barriers to market entry, and the need to balance innovation with affordability and access to medicines. Effective management of IPR challenges is essential to foster innovation, attract investment, and maintain a competitive edge in the global market.
- Rapid **Technological** Changes: The pharmaceutical industry is witnessing rapid technological advancements, particularly in areas such as biotechnology, artificial intelligence, and data analytics. While these innovations offer opportunities for improved drug discovery, development, and manufacturing processes, they also pose challenges in terms of adapting to new upgrading infrastructure, technologies, acquiring specialized talent. Companies must invest in research and development, collaborate with technology partners, and foster a culture of innovation to harness the benefits of technological advancements effectively.
- Price Controls and Margin Pressure: Price controls and margin pressure present significant challenges for Indian pharmaceutical companies, particularly in the context of government regulations, pricing policies, and competition from low-cost producers. Price controls imposed by regulatory authorities limit profit margins while increasing input costs and market competition further exacerbate margin pressures. Balancing cost considerations with maintaining product quality and profitability strategic pricing strategies, requires optimization measures, and diversification into high-margin product segments.
- Quality Control and Assurance: Ensuring product quality and safety is a fundamental requirement for pharmaceutical companies to maintain consumer trust and comply with regulatory standards. Challenges in quality control and assurance may stem from issues such as manufacturing defects,

- supply chain disruptions, and regulatory noncompliance. Implementing robust quality management systems, conducting regular inspections and audits, and investing in advanced quality assurance technologies are essential to mitigate quality-related risks and uphold product integrity.
- Supply Chain Management: Effective supply chain management is critical for pharmaceutical companies ensure timely production, distribution, and delivery of medicines to endusers. Challenges in supply chain management may include inventory management issues, logistical constraints, and disruptions due to natural disasters or geopolitical factors. Adopting agile supply chain practices, leveraging digital technologies for real-time tracking monitoring, and fostering collaboration with supply chain partners are key strategies to enhance supply chain resilience and responsiveness.
- Market Access and Distribution Challenges: Accessing markets and distributing products efficiently is essential for pharmaceutical companies to reach patients and healthcare providers. Challenges in market access and distribution may arise from regulatory barriers, market fragmentation, and inadequate infrastructure. Developing market entry strategies tailored specific geographical regions, establishing distribution networks through partnerships or acquisitions, and leveraging digital platforms for direct-to-consumer sales can help overcome these challenges and expand market reach.
- Research and Development (R&D) Innovation: Research and development (R&D) and innovation are fundamental drivers of growth and competitiveness in the pharmaceutical industry. However, Indian pharmaceutical companies face challenges in funding R&D initiatives, attracting talent, and translating research discoveries into marketable products. Investing in collaborative R&D partnerships, incentivizing innovation through government grants or tax incentives, and fostering a culture of creativity and risk-taking can stimulate innovation and accelerate development of breakthrough therapies.

- Talent Management: Talent management is crucial for building a skilled workforce capable of driving organizational success and innovation. Challenges in talent management may include attracting and retaining top talent, developing leadership capabilities, and fostering diversity and inclusion. Implementing talent development programs, offering competitive compensation and benefits, and promoting a supportive work culture that values employee engagement and career growth are essential strategies to address talent management challenges effectively.
- Competitive Pressures: Indian pharmaceutical companies face intense competition from both domestic and international players, driving the need for differentiation, innovation, and agility. Competitive pressures may arise from factors such as pricing competition, product commoditization, and market consolidation. Developing distinctive product offerings, expanding into niche markets or therapeutic areas, and pursuing strategic partnerships or acquisitions can help companies gain a competitive advantage and sustain growth in a competitive landscape.

Addressing these ten challenges requires a multifaceted approach encompassing regulatory compliance, technological innovation, strategic pricing, quality assurance, supply chain optimization, market expansion, R&D investment, development, and competitive strategy formulation. By effectively managing these challenges, Indian pharmaceutical companies can enhance their strategic capabilities, drive sustainable growth, and contribute to improving healthcare outcomes for patients worldwide.

II. STATEMENT OF THE PROBLEM

The study aims to investigate the multifaceted Indian challenges confronting pharmaceutical companies in effectively implementing and executing strategic management practices. Specifically, it seeks to explore the demographic distribution within these companies, including gender, age, company representation, work experience, and monthly income levels, to identify potential disparities and their implications for strategic decision-making. Additionally, the study aims to analyze the reliability of the measurement scale for various challenges

through mean scores and Cronbach's alpha coefficients, providing insights into the consistency and validity of the assessment. Furthermore, chisquare analysis is employed to assess the association between different challenges and strategic management practices, offering valuable insights into the interplay between these factors. By addressing these aspects comprehensively, the study aims to provide actionable recommendations to help pharmaceutical companies navigate and overcome the identified challenges, fostering their long-term growth and sustainability in a dynamic industry landscape.

III. SIGNIFICANCE OF THE STUDY

The significance of this study lies in its potential to offer valuable insights into the challenges faced by Indian pharmaceutical companies in implementing and executing strategic management practices. By examining demographic factors, reliability analysis, and chi-square analysis, the study provides a comprehensive understanding of the complexities within the industry. Understanding these challenges is crucial for pharmaceutical companies to adapt their strategies effectively, optimize resource allocation, and enhance competitiveness in a rapidly evolving market. Furthermore, the findings can inform the development of targeted interventions and best practices to address the identified challenges, ultimately contributing to the sustainability and growth of the pharmaceutical sector in India. Moreover, the study's insights can also have broader implications for other industries grappling with similar strategic management challenges, thus adding to the body of knowledge in the field of management and organizational studies.

IV. REVIEW OF RELATED LITERATURE

The review of literature emphasizes the importance of marketing in the pharmaceutical field and stresses the need to adjust traditional marketing strategies to fit the unique demands of healthcare (Adkonkar, Angrish, & Bansal, 2022; Leonardo et al., 2019). Recognizing consumer behaviour, especially among doctors, and catering to their requirements through strategic marketing efforts are crucial for pharmaceutical companies to succeed in a competitive market environment (Hamade, 2022). India's prominence in

the global pharmaceutical market, ranking third in both volume and value, is noteworthy, driven by factors like global trade expansion and innovation (Leonardo et al., 2019). While pharmaceutical marketing encounters challenges, fundamental concepts focusing on understanding and meeting customer needs remain critical (Leonardo et al., 2019). The essence of pharmaceutical marketing lies in the "marketing mix," encompassing elements such as product, price, place, and promotion, with newer dimensions like packaging, partnerships, and policies recognized to reflect integrated care complexities (Sadiku-Dushi et al., 2019; Al Thabbah et al., 2022). Understanding consumer buying behavior is pivotal, influenced by economic conditions, technological advancements, and cultural norms (Hole et al., 2021). Analyzing physician prescribing patterns is vital for devising effective business strategies amidst rising competition and evolving prescribing practices (Hamade, 2022). Successful implementation of indispensable marketing strategies is for pharmaceutical industry's success, with a well-defined plan and its execution being equally crucial (Limbu & Huhmann, 2022). Green marketing strategies and efficient utilization of the marketing mix are imperative, with pharmaceutical advertising often linked inversely to drug prescription indications (Lim, 2023).

Primary sales representatives (PSRs) play a pivotal role in launching promotional initiatives, and their skills and follow-up techniques are vital for plan execution (Qureshi & Raza, 2022). The future of pharmaceutical marketing looks promising with an increasing focus on eco-friendly advertising strategies, reflecting a transition towards environmentally responsible practices (Nandy & Nandy, 2022). Intermediary conflicts pose significant concerns, emphasizing the need for effective distributorship management, improved communication among channel participants, and digital integration to address challenges (Tallawy & Noha, 2023). While pharmaceutical product marketing presents both challenges and opportunities, leveraging marketing principles can navigate complexities and drive innovation, shaping the future landscape of pharmaceutical marketing (Harsha et al., 2023).

• Objective of the study

The objective of the study is to analyze and interpret the challenges faced by Indian pharmaceutical companies in implementing and executing strategic management practices, with a focus on demographic factors, reliability analysis, and chi-square analysis.

• Sample size and Sampling

The sample size for the study on Indian pharmaceutical companies' challenges in implementing strategic management practices is 240 participants.

V. DATA ANALYSIS AND INTERPRETATION

Data Analysis and Interpretation

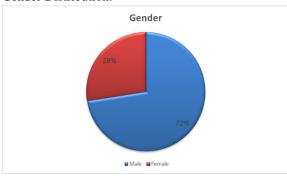
Particular	Category	Frequenc	Percenta
		y	ge
Gender	Male	175	72.5%
	Female	65	27.5%
	Total	240	100%
Age	Below 25	6	2.5%
	years		
	25-50 years	152	63.3%
	Above 50	82	34.2%
	years		
	Total	240	100%
Company	Sun	63	26.3%
	Pharmaceutic		
	al Industries		
	Ltd		
	Dr. Reddy's	73	30.4%
	Laboratories		
	Ltd		
	Cipla Ltd	42	17.5%
	Lupin	62	25.8%
	Limited		
	Total	240	100%
Work	Less than 5	34	14.2%
Experien	Years		
ce	5-10 years	66	27.5%
	10 – 15 Years	80	33.3%
	Above 15	60	25%
	Years		
	Total	240	100%
Monthly	Less than	84	35%
Income	20,000		

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20,000-	66	27.5%
40,000		
40,000-	52	21.7%
60,000		
Above	38	15.8%
60,000		
Total	240	100%

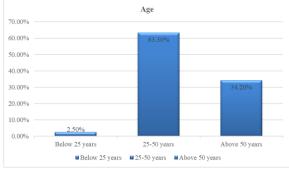
(Source: Primary Data)

Gender Distribution:



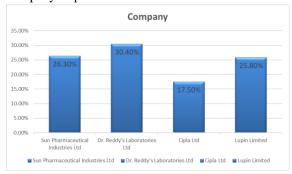
The data shows that there's a significant gender imbalance within the pharmaceutical workforce, with 72.5% being male and only 27.5% female. This could pose challenges in ensuring diversity and inclusivity in strategic decision-making processes.

Age Distribution:



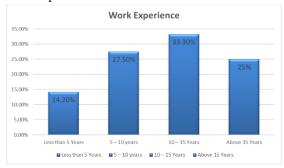
The majority of the workforce falls within the age range of 25-50 years (63.3%), followed by those above 50 years (34.2%). While having experienced professionals is beneficial for strategic management, there might be challenges in adapting to rapid technological changes and innovative strategies.

Company Representation:



The distribution among pharmaceutical companies indicates varying market shares, with Dr. Reddy's Laboratories Ltd having the highest representation at 30.4%. Challenges may arise in aligning strategic goals and initiatives across different company cultures and structures.

Work Experience:



A significant portion of the workforce has 10-15 years of experience (33.3%), followed closely by those with 5-10 years (27.5%). While experience brings expertise, it may also lead to resistance to change, hindering the implementation of new strategic initiatives.

Monthly Income:



The distribution of monthly income levels shows that a substantial portion of employees earns less than 20,000 (35%), indicating potential challenges in talent retention and motivation, which are crucial for effective strategic execution.

Reliability Analysis

Challenges Faced by the	Mean	Cronbach's
Indian Pharmaceutical		Alpha
Companies in		
Implementing and		
Executing Strategic		
Management Practices		
Regulatory Compliance	2.3245	0.524
Intellectual Property	2.6258	0.536
Rights (IPR)		
Rapid Technological	2.3331	0.522
Changes		
Price Controls and	2.6549	0.501
Margin Pressure		
Quality Control and	2.3368	0.584
Assurance		
Supply Chain	2.6254	0.511
Management		
Market Access and	2.3598	0.512
Distribution Challenges		
Research and	2.3654	0.566
Development (R&D) and		
Innovation		
Talent Management	2.3158	0.591
Competitive Pressures	2.3699	0.528

(Source: Primary Data)

Interpretation of Mean Scores:

- Mean scores provide an average indication of the perceived level of challenges across different aspects of strategic management practices within Indian pharmaceutical companies. A higher mean score suggests a greater perceived challenge, while a lower score indicates a lesser challenge. Analyzing the mean scores:
- Challenges such as Price Controls and Margin Pressure (2.6549) and Supply Chain Management (2.6254) have relatively higher mean scores, indicating that they are perceived as more challenging by respondents.
- Challenges like Regulatory Compliance (2.3245) and Rapid Technological Changes (2.3331) have moderate mean scores, suggesting a moderate level of perceived challenge.

• Talent Management (2.3158) has the lowest mean score, indicating that it is perceived as the least challenging aspect among the surveyed challenges.

Interpretation of Cronbach's Alpha Coefficients:

- Cronbach's alpha coefficients assess the internal consistency reliability of the measurement scale for each challenge category. Higher alpha values (closer to 1) indicate greater internal consistency, suggesting that the items within the scale are measuring the same underlying construct reliably. Lower alpha values may indicate inconsistency among the items.
- Challenges like Talent Management (Cronbach's Alpha: 0.591) and Quality Control and Assurance (Cronbach's Alpha: 0.584) demonstrate relatively higher internal consistency, suggesting that the items within these categories are measuring the challenges consistently.
- Challenges such as Regulatory Compliance (Cronbach's Alpha: 0.524) and Rapid Technological Changes (Cronbach's Alpha: 0.522) have moderate alpha coefficients, indicating moderate internal consistency among the items within these categories.
- Challenges like Price Controls and Margin Pressure (Cronbach's Alpha: 0.501) exhibit lower alpha coefficients, suggesting less internal consistency among the items within this category.

Synthesis:

- Analyzing both mean scores and Cronbach's alpha coefficients together provides a comprehensive understanding of the challenges faced by Indian pharmaceutical companies in implementing and executing strategic management practices:
- While challenges like Price Controls and Margin Pressure are perceived as highly challenging on average, their lower Cronbach's alpha coefficients indicate potential inconsistency in how respondents perceive and rate individual items within these categories.
- Challenges with higher internal consistency, such as Talent Management and Quality Control, suggest that respondents have a more consistent perception of these challenges across different items.

Chi-Square Analysis

Challenges Faced by the	Chi-	Sig.
Indian Pharmaceutical	Square	
Companies in Implementing	Value	
and Executing Strategic		
Management Practices		
Regulatory Compliance	121.25	0.000
Intellectual Property Rights	141.26	0.145
(IPR)		
Rapid Technological Changes	125.47	0.085
Price Controls and Margin	135.62	0.076
Pressure		
Quality Control and	144.62	0.017
Assurance		
Supply Chain Management	123.22	0.021
Market Access and	132.65	0.601
Distribution Challenges		
Research and Development	134.52	0.011
(R&D) and Innovation		
Talent Management	136.52	0.021
Competitive Pressures	138.62	0.451

(Source: Primary Data)

Chi-square analysis is a statistical method used to determine whether there is a significant association between categorical variables. In the context of the provided data on challenges faced by Indian pharmaceutical companies in implementing and executing strategic management practices, Chi-square analysis can help assess the relationship between different challenges.

Interpretation of Chi-Square Values:

- The Chi-square value indicates the strength of association between the challenges and strategic management practices. Higher Chi-square values suggest a stronger association, while lower values indicate a weaker association.
- For example, challenges with higher Chi-square values, such as Quality Control and Assurance (144.62) and Intellectual Property Rights (IPR) (141.26), have a stronger association with strategic management practices.

Interpretation of Significance Levels (Sig.):

• The significance level (Sig.) indicates the probability of observing the association between challenges and strategic management practices by

- chance alone. A significance level below a predetermined threshold (e.g., 0.05) suggests that the association is statistically significant.
- Challenges with significance levels below the threshold are considered to have a significant association with strategic management practices.
- For example, challenges like Regulatory Compliance (Sig. = 0.000) and Research and Development (R&D) and Innovation (Sig. = 0.011) have significance levels below 0.05, indicating a significant association with strategic management practices.

Now, let's analyze each challenge based on Chi-square values and significance levels:

Regulatory Compliance:

• Chi-Square Value: 121.25

• Sig.: 0.000

 The high Chi-square value and a significance level of 0.000 indicate a significant association between regulatory compliance challenges and strategic management practices. This suggests that regulatory compliance significantly impacts strategic management decisions and execution within pharmaceutical companies.

Intellectual Property Rights (IPR):

• Chi-Square Value: 141.26

• Sig.: 0.145

• Although the Chi-square value is high, the significance level (Sig. = 0.145) is above the threshold of 0.05, indicating that the association between IPR challenges and strategic management practices is not statistically significant at the 0.05 level. This suggests that IPR challenges may not have a significant impact on strategic management practices within pharmaceutical companies, at least based on this analysis.

Rapid Technological Changes, Price Controls and Margin Pressure, Quality Control and Assurance, Supply Chain Management, Research and Development (R&D) and Innovation, Talent Management, and Competitive Pressures:

 These challenges all have Chi-square values indicating some level of association with strategic management practices. However, their significance levels vary, suggesting that while some challenges (e.g., Quality Control and Assurance, Research and Development) have a statistically significant association with strategic management practices, others may not be statistically significant at the 0.05 level.

Chi-square analysis provides insights into the association between different challenges and strategic management practices within Indian pharmaceutical companies. Challenges with both high Chi-square values and significance levels below 0.05 are deemed to have a significant impact on strategic management decisions and execution, guiding organizations in prioritizing resources and efforts to address these critical challenges effectively.

CONCLUSION

The data analysis and interpretation provide a comprehensive understanding of the challenges encountered by Indian pharmaceutical companies in implementing strategic management practices. Demographic analysis reveals gender imbalances and a predominantly experienced workforce, while varying market shares among companies underscore the need for cohesive strategic alignment. Reliability consistent perceptions analysis indicates challenges such as Talent Management and Quality Control, contrasting with the variability observed in challenges like Price Controls and Margin Pressure. Chi-square analysis elucidates significant associations between strategic management practices challenges like Regulatory Compliance and Research and Development (R&D) and Innovation, while others, such as Intellectual Property Rights (IPR), exhibit less substantial connections. Addressing these findings necessitates holistic strategies encompassing diversity promotion, talent management enhancement, regulatory compliance, and innovation fostering to navigate the multifaceted landscape of the pharmaceutical industry effectively.

SUGGESTIONS

 Diversity and Inclusion Initiatives: Given the significant gender imbalance in the pharmaceutical workforce, implementing diversity and inclusion initiatives is crucial. Companies can establish programs to promote gender diversity at all levels

- of the organization, including leadership positions. This could involve targeted recruitment efforts, mentorship programs for female employees, and policies to ensure equal opportunities for career advancement.
- Talent Management Strategies: predominantly experienced workforce, companies should focus on effective talent management strategies to retain and develop their employees. This includes providing opportunities for continuous learning and professional development, offering competitive compensation packages, and creating a supportive work environment that values employee well-being and career growth. Additionally, succession planning should be prioritized to ensure a smooth transition of knowledge and leadership roles as senior employees retire.
- Strategic Alignment Among Companies: Given the varying market shares among pharmaceutical companies, fostering strategic alignment and collaboration is essential. Companies can establish partnerships or alliances to leverage each other's strengths and resources, particularly in areas such as research and development, supply chain This management, and market access. collaborative approach can enhance competitiveness and drive innovation within the industry.
- Enhanced Regulatory Compliance Practices: The significant association between regulatory compliance challenges and strategic management practices underscores the importance of robust compliance frameworks. Companies should invest in comprehensive compliance programs that keep pace with evolving regulations and industry standards. This includes regular training for employees, thorough risk assessments, and proactive measures to address compliance issues.
- Innovation and Research Investment: Challenges related to research and development (R&D) and innovation have been identified as significant factors impacting strategic management practices. Therefore, companies should prioritize investment in R&D initiatives and foster a culture of innovation. This can involve allocating resources to support research projects, incentivizing employees to generate innovative ideas, and

- exploring partnerships with academic institutions or startups to access cutting-edge technologies and solutions.
- Continuous Monitoring and Adaptation: Given the
 dynamic nature of the pharmaceutical industry,
 companies must continuously monitor market
 trends, regulatory changes, and competitive
 pressures. This requires agility and adaptability in
 strategic decision-making processes. Companies
 should establish mechanisms for regular
 performance evaluation, scenario planning, and
 strategic reviews to identify emerging
 opportunities and risks and adjust their strategies
 accordingly.

By implementing these suggestions, Indian pharmaceutical companies can overcome the challenges identified in the data analysis and interpretation and enhance their capabilities in implementing and executing strategic management practices effectively. These proactive measures will not only drive organizational growth and competitiveness but also contribute to the long-term sustainability and success of the industry as a whole.

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