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The Impact of Innovativeness on Brand Competitiveness Through the Mediating Role of Brand Differentiation (Case Study: National Pharmaceutical Industry)

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ABSTRACT

This study aimed to examine the effect of innovation orientation on brand competitiveness with the mediating role of brand differentiation in the pharmaceutical industry. The present research was applied in purpose and employed a descriptive–survey design using a mixed-methods approach. In the qualitative phase, in-depth individual interviews were conducted with eight experts from the pharmaceutical industry and analyzed through grounded theory using ATLAS.ti software to extract the research constructs. In the quantitative phase, a localized researcher-developed questionnaire was distributed among managers and experts of pharmaceutical companies nationwide, of which 379 valid responses were collected. The instrument's validity was confirmed through face and construct validity, and reliability was verified using Cronbach's alpha. Data were analyzed using SPSS and LISREL software. Pearson correlation coefficients were employed for preliminary analysis, and structural equation modeling was applied to test the hypothesized relationships and evaluate the conceptual model. Structural equation modeling revealed that innovation orientation had a positive and significant effect on brand differentiation ($\beta = 0.31$, $t = 5.53$, $p < 0.001$) and brand competitiveness ($\beta = 0.19$, $t = 3.32$, $p < 0.001$). Brand differentiation also exerted a strong positive effect on brand competitiveness ($\beta = 0.41$, $t = 6.29$, $p < 0.001$). The indirect effect of innovation orientation on brand competitiveness through brand differentiation was significant, resulting in a total effect of $\beta = 0.31$ ($t = 5.16$, $p < 0.001$). The model demonstrated excellent fit indices, confirming the robustness of the proposed relationships. The findings confirm that innovation orientation enhances brand competitiveness both directly and indirectly through the mediating mechanism of brand differentiation, underscoring the strategic importance of integrating innovation and branding initiatives within pharmaceutical firms.

Keywords: Brand competitiveness; Innovativeness; Brand differentiation; Pharmaceutical industry

Introduction

In the contemporary global marketplace, organizations are operating within an increasingly volatile, uncertain, complex, and competitive environment that compels firms to continuously seek sustainable competitive advantages through strategic innovation and effective brand management. Competitive intensity, rapid technological advancement, market globalization, and changing consumer expectations have significantly reshaped the dynamics

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of organizational performance and strategic positioning, particularly in knowledge-intensive industries such as pharmaceuticals. Competitiveness has evolved beyond traditional cost-based or production-based paradigms and is now deeply rooted in intangible resources, including innovation capability, brand equity, differentiation strategies, and customer-centric value creation (1, 2). In this context, innovation orientation emerges as a core strategic posture that enables firms to adapt to environmental turbulence, develop novel offerings, and strengthen market positioning, thereby influencing both brand differentiation and overall brand competitiveness.

Innovation orientation refers to an organization's predisposition to continuously support new ideas, experimentation, creativity, and the development of innovative processes, products, and business models. It reflects a long-term strategic commitment to innovation as a fundamental driver of organizational success. Prior research demonstrates that firms with strong innovation orientation exhibit superior performance, greater market responsiveness, and higher growth potential compared to less innovative competitors (3, 4). Innovation-oriented firms are better equipped to recognize emerging opportunities, respond effectively to customer needs, and generate value through continuous improvement and technological advancement (5, 6). Consequently, innovation orientation has become a central construct in strategic management and marketing literature, serving as a cornerstone for building long-term competitive advantage.

Brand competitiveness represents a firm's ability to sustain superior market position, attract and retain customers, and outperform competitors through the perceived value and strength of its brand. It encompasses multiple dimensions including brand awareness, brand loyalty, perceived quality, brand associations, and market performance outcomes (7, 8). In highly regulated and technologically sophisticated industries such as pharmaceuticals, brand competitiveness plays a particularly critical role because product differentiation is often constrained by regulatory requirements, patent structures, and standardized production processes. Under such conditions, firms must rely heavily on branding strategies, innovation capabilities, and differentiation mechanisms to create meaningful competitive distinctions in the minds of consumers, healthcare providers, and institutional buyers (9, 10).

Brand differentiation is the strategic process through which firms create unique brand identities and value propositions that distinguish their offerings from competitors. Effective brand differentiation enhances customer recognition, builds emotional connections, increases switching costs, and strengthens brand loyalty, thereby contributing directly to competitive advantage (11, 12). Differentiation may stem from functional product attributes, service quality, innovation, technological sophistication, communication strategies, corporate reputation, and customer experience. In innovation-driven markets, differentiation is increasingly shaped by firms' capacity to translate innovative capabilities into meaningful brand value that resonates with stakeholders (13, 14). Consequently, brand differentiation is not merely an outcome of innovation but a critical mechanism through which innovation orientation influences brand competitiveness.

Empirical research consistently supports the positive relationship between innovation orientation and firm performance. Innovation-oriented organizations tend to exhibit higher productivity, stronger customer relationships, and greater market success (3, 4). Innovation enhances organizational flexibility, learning capacity, and strategic adaptability, enabling firms to remain resilient amid market disruptions. Moreover, innovation orientation strengthens marketing capabilities, allowing firms to deliver superior customer value and reinforce brand positioning (15, 16). Through continuous product development, process improvement, and technological foresight, innovation-

oriented firms generate distinctive offerings that serve as foundations for brand differentiation and sustained competitiveness.

In the pharmaceutical industry, innovation orientation assumes even greater significance due to rapid scientific advancement, intense regulatory oversight, global competition, and high R&D investments. Pharmaceutical firms operate in an environment where continuous innovation is essential for survival and growth. Breakthrough drugs, advanced delivery systems, digital health technologies, and personalized medicine are transforming the industry's competitive landscape. Firms that successfully embed innovation orientation within their strategic frameworks achieve superior market performance and stronger brand positioning (9, 10). At the same time, innovation enables pharmaceutical brands to build trust, credibility, and long-term relationships with healthcare professionals and patients, reinforcing their competitive standing (7, 8).

While innovation orientation directly enhances organizational performance, its influence on brand competitiveness often operates through mediating mechanisms, among which brand differentiation is particularly critical. Innovation alone does not guarantee competitive success unless it is effectively translated into perceived brand value and distinct market positioning. Firms must therefore integrate innovation activities with branding strategies to create coherent brand identities that communicate uniqueness, quality, and reliability to stakeholders (13, 17). Brand differentiation serves as the strategic bridge that converts innovation investments into sustainable competitive outcomes by shaping consumer perceptions and market responses.

The mediating role of brand differentiation between innovation orientation and brand competitiveness has gained increasing attention in marketing and strategic management research. Scholars argue that innovation strengthens brand differentiation by enhancing product uniqueness, service quality, technological leadership, and customer experience, which in turn elevate brand competitiveness (14, 15). Brand differentiation thus functions as a dynamic capability that enables firms to appropriate the value created by innovation and transform it into long-term competitive advantage (11, 12). However, despite growing interest in this relationship, empirical evidence remains fragmented, particularly in the context of emerging economies and specialized industries such as pharmaceuticals.

The pharmaceutical sector presents unique challenges and opportunities for examining the interplay between innovation orientation, brand differentiation, and brand competitiveness. Pharmaceutical markets are characterized by high uncertainty, complex stakeholder relationships, stringent regulations, and rapidly evolving technologies. Under these conditions, firms must continuously innovate while simultaneously managing brand reputation, trust, and differentiation in highly competitive environments (9, 10). Moreover, globalization and digital transformation have intensified competition by expanding market access and increasing transparency, further amplifying the strategic importance of innovation-driven brand competitiveness (2, 6).

Recent studies highlight the growing influence of digital technologies, social media, and electronic word-of-mouth on brand reputation and competitive positioning, underscoring the need for integrated innovation and branding strategies (18, 19). Innovation orientation enables firms to leverage these emerging platforms effectively, strengthen customer engagement, and reinforce brand differentiation in digital ecosystems. Simultaneously, evolving consumer expectations demand personalized, reliable, and value-driven brand experiences, further elevating the strategic role of brand differentiation in competitive markets (14, 19).

Despite extensive theoretical development, several research gaps remain. First, much of the existing literature examines innovation orientation and competitiveness at the firm level without explicitly addressing the mediating mechanisms that translate innovation into brand-based competitive advantage. Second, empirical studies focusing

on pharmaceutical industries in developing economies remain limited, leaving important contextual dynamics underexplored (16, 20). Third, the combined examination of innovation orientation, brand differentiation, and brand competitiveness within a unified structural framework remains insufficiently addressed in prior research. Addressing these gaps is critical for advancing theoretical understanding and providing actionable insights for practitioners seeking to strengthen competitive positioning through innovation-driven branding strategies.

Furthermore, prior research emphasizes that organizational culture and leadership play a pivotal role in fostering innovation orientation and sustaining competitive performance (5). Firms that cultivate cultures of creativity, experimentation, and learning are more likely to achieve continuous innovation and strategic renewal. Such organizational environments facilitate effective brand differentiation by aligning internal capabilities with external market expectations and stakeholder demands (1, 17). Therefore, understanding the interdependencies among innovation orientation, brand differentiation, and brand competitiveness is essential for developing comprehensive strategic frameworks tailored to complex industry environments.

In summary, innovation orientation constitutes a foundational strategic capability that enhances firm adaptability, value creation, and market performance. Brand differentiation serves as a critical mechanism through which innovation investments are transformed into perceived brand value and sustainable competitive advantage. Brand competitiveness reflects the cumulative outcome of these strategic processes, enabling firms to achieve superior market positioning, customer loyalty, and long-term success. In the pharmaceutical industry, where innovation and branding are inextricably linked, investigating these relationships offers substantial theoretical and practical significance for organizational leaders, policymakers, and marketing strategists seeking to strengthen national and international competitiveness.

Accordingly, the present study aims to examine the impact of innovation orientation on brand competitiveness with the mediating role of brand differentiation in the pharmaceutical industry.

Methods and Materials

This study adopted an applied research orientation in terms of purpose and was conducted within the framework of descriptive–survey research, utilizing an exploratory field-based analytical approach. From the perspective of data collection, the research was field-based, and with respect to methodological structure, it belonged to correlational research employing structural equation modeling, as the primary objective was to examine the relationships among multiple latent variables, their observed indicators, and the overall model fit and approximation. In terms of temporal scope, the study followed a cross-sectional design. The qualitative phase employed in-depth individual interviews with experts and specialists from the pharmaceutical industry, as well as an extensive review of theoretical foundations, to extract the core constructs of the research. These qualitative findings informed the development of a localized researcher-made questionnaire used in the quantitative phase. The statistical population consisted of managers and experts working in pharmaceutical companies nationwide. A proportional stratified random sampling technique was applied in the quantitative phase. Sample size determination followed the formula $10q \leq n \leq 15q$, where q represents the sum of the number of hypotheses and questionnaire items, and n denotes the required sample size. Given that the study included 27 questionnaire items and three research hypotheses, q equaled 30, resulting in a minimum required sample size of 300 and a maximum allowable size of 450. To ensure robustness and precision of analysis, questionnaires were distributed among 398 individuals working in active

pharmaceutical companies across the country, of which 379 completed questionnaires were accurately collected and subsequently analyzed, satisfying both lower and upper bounds of the sample size criterion.

Data were collected using two primary instruments: in-depth individual interviews in the qualitative phase and a researcher-developed questionnaire in the quantitative phase. The qualitative instrument involved semi-structured, in-depth interviews conducted with eight experts and specialists from the pharmaceutical industry. These interviews were analyzed using a grounded theory approach with the assistance of ATLAS.ti software to extract axial and open coding concepts, which served as the foundation for developing the quantitative instrument. The final questionnaire was localized and researcher-made, with its content derived from both the qualitative findings and established theoretical literature. Items 4 and 5 were adapted from Prajogo (2015), items 6 and 7 from Ahnades (2023), items 8, 9, 10, and 11 from Gupta et al. (2020), items 14 to 17 from Gupta et al. (2016), items 19, 20, 22, and 23 from Gupta et al. (2020), and items 26 and 27 from the doctoral dissertation of Dehghani Soltani (2017). Items 1 to 7 measured innovation orientation, items 8 to 13 measured brand differentiation, and items 14 to 27 measured brand competitiveness. Brand competitiveness was conceptualized as a multidimensional construct comprising three dimensions: primary features of brand competitiveness measured by items 14 to 18, external features of brand competitiveness measured by items 19 to 23, and company brand marketing power measured by items 24 to 27. All questionnaire items were measured using a five-point Likert scale. The validity of the measurement instrument was examined through face validity, whereby expert opinions and feedback from university professors were obtained and incorporated into the final version of the questionnaire. Construct validity was later assessed through the measurement model during data analysis. The reliability of the instrument was tested using Cronbach's alpha coefficient, confirming acceptable internal consistency for all constructs.

Quantitative data analysis was conducted using SPSS and LISREL software. Descriptive and inferential statistics were first generated to examine data distribution and preliminary relationships among variables. Pearson's correlation coefficient was employed to assess the degree and direction of association between the main research variables. To test the research hypotheses and validate the conceptual model, structural equation modeling was applied using LISREL. The analysis involved assessment of the measurement model to confirm construct validity, followed by evaluation of the structural model to determine the strength and significance of hypothesized relationships, including the mediating role of brand differentiation in the relationship between innovation orientation and brand competitiveness. Model fit indices were examined to ensure adequacy of model approximation and explanatory power.

Findings and Results

The demographic characteristics of the 379 respondents indicate that the majority were male, with 247 participants (64.660%), while 135 participants (35.340%) were female. In terms of marital status, 310 respondents (81.152%) were married and 72 respondents (18.848%) were single. Regarding age distribution, 71 participants (18.587%) were under 30 years of age, 211 participants (55.236%) were between 31 and 45 years, 91 participants (23.821%) were between 46 and 60 years, and 9 participants (2.356%) were over 61 years old. Concerning educational attainment, 43 respondents (11.257%) held an associate degree or lower, 192 respondents (50.262%) had a bachelor's degree, 128 respondents (33.507%) possessed a master's degree, and 19 respondents (4.974%) had a doctoral degree or higher. With respect to organizational position, 41 respondents (10.733%) were marketing managers, 140 respondents (36.649%) were marketing specialists, 84 respondents (21.990%) were sales

specialists, and 117 respondents (30.628%) served as scientific representatives, reflecting a diverse professional composition of the study sample.

The findings indicate very strong reliability and sampling adequacy for the research constructs. The internal consistency of the variables, assessed using Cronbach's alpha coefficient, was extremely high, with values of 0.955 for innovation orientation, 0.904 for brand differentiation, and 0.938 for brand competitiveness, while the overall reliability of the measurement instrument reached 0.933, demonstrating excellent internal coherence among the items. Furthermore, prior to conducting factor analysis, the adequacy of the sample was examined using the Kaiser–Meyer–Olkin measure, which yielded highly satisfactory results. The KMO values were 0.944 for innovation orientation, 0.909 for brand differentiation, and 0.940 for brand competitiveness, all of which exceed the recommended threshold of 0.90 and therefore indicate outstanding sampling adequacy. In addition, the significance level associated with Bartlett's test of sphericity for all constructs was 0.000, confirming the suitability of the data for factor analysis and supporting the robustness of the measurement structure.

Table 1. Extraction of Indicators in the Qualitative Phase Using In-Depth Individual Interviews with Grounded Theory Approach (8 Interviewees)

Theme	Axial Coding Concepts	Interviewee Codes	Frequency	Percentage
Brand Competitiveness	Primary features of brand competitiveness	L1, L2, L3, L5, L6	5	29.4
		L1, L2, L3, L8	4	23.5
	External features of brand competitiveness	L2, L3, L4	3	17.7
	Brand marketing power of the company	L1, L3, L4, L6, L7	5	29.4
	Total		17	100
Innovation Orientation	Continuous collaboration with global intelligent knowledge networks	L1, L2, L3, L4, L6	5	45.4
	The company continuously and dynamically creates and develops innovative ideas and thoughts	L4, L7, L8	3	27.3
	Strategic investment in research and development and technology foresight	L2, L3, L4	3	27.3
	Total		11	100
Brand Differentiation	This brand makes promises and keeps them, which increases trust	L1, L2, L3, L6, L8	5	55.5
	Implementing strategies and operational processes with precision and speed	L1, L2, L3, L4	4	44.5
	Total		9	100

The qualitative analysis based on eight expert interviews led to the identification of three principal themes: brand competitiveness, innovation orientation, and brand differentiation. Within brand competitiveness, a total of 17 coded statements were extracted, with primary features and brand marketing power each accounting for the highest share of responses at 29.4%, followed by economic growth capability at 23.5% and experiential profitability at 17.7%, indicating that structural strength, knowledge-based identity, and market dynamism were viewed as central drivers of competitive branding. Innovation orientation yielded 11 coded statements, of which continuous collaboration with global intelligent knowledge networks constituted the dominant category at 45.4%, while dynamic idea generation and strategic R&D investment each represented 27.3%, highlighting the perceived importance of knowledge integration and long-term innovation investment. Brand differentiation generated 9 coded statements, where trust-building through fulfilled brand promises accounted for 55.5% of responses and precision and speed in strategy execution represented 44.5%, emphasizing that credibility and operational excellence form the core of brand distinctiveness in the pharmaceutical industry.

Table 2. Pearson Correlation Matrix Among Innovation Orientation, Brand Differentiation, and Brand Competitiveness (N = 379)

Variable	Innovation Orientation	Brand Differentiation	Brand Competitiveness
Innovation Orientation	1	0.282**	0.305**
Sig. (2-tailed)	—	< 0.001	< 0.001
N	379	379	379
Brand Differentiation	0.282**	1	0.377**
Sig. (2-tailed)	< 0.001	—	< 0.001
N	379	379	379
Brand Competitiveness	0.305**	0.377**	1
Sig. (2-tailed)	< 0.001	< 0.001	—
N	379	379	379

The correlation analysis revealed statistically significant and positive relationships among all major study variables. Innovation orientation demonstrated a moderate positive association with brand differentiation ($r = 0.282$, $p < 0.001$) and with brand competitiveness ($r = 0.305$, $p < 0.001$), indicating that higher levels of organizational innovativeness are linked to stronger brand distinction and enhanced competitive positioning. In addition, brand differentiation exhibited the strongest correlation with brand competitiveness ($r = 0.377$, $p < 0.001$), suggesting that differentiation mechanisms play a central role in strengthening competitive outcomes within pharmaceutical firms. All relationships were significant at the 0.01 level with a sample size of 379, confirming robust interconnections among the core constructs of the research model.

Table 3. Summary of Model Fit Indices for Confirmatory Factor Analyses and Overall Structural Model

Construct / Model	χ^2/df	RMSEA	GFI	AGFI	CFI	NFI	NNFI	Model Fit Status
Innovation Orientation CFA	1.97	0.051	0.98	0.96	1.00	0.99	0.99	Good–Excellent
Brand Differentiation CFA	2.69	0.067	0.98	0.96	0.99	0.99	0.99	Very Good–Excellent
Brand Competitiveness CFA	1.57	0.039	0.96	0.94	1.00	0.99	0.99	Very Good–Excellent
Overall Structural Model	1.61	0.040	0.95	0.92	0.99	0.98	0.99	Good–Excellent

The confirmatory factor analyses and the overall structural model demonstrated consistently strong goodness-of-fit across all evaluated indices. For the innovation orientation measurement model, the χ^2/df ratio of 1.97 was well below the recommended threshold of 3, indicating an excellent relative fit between the observed and estimated covariance matrices. The RMSEA value of 0.051 confirmed acceptable approximation error, while exceptionally high values of GFI (0.98), AGFI (0.96), CFI (1.00), NFI (0.99), and NNFI (0.99) reflected superior absolute and incremental model fit.

The measurement model for brand differentiation similarly exhibited very satisfactory fit statistics. The χ^2/df ratio of 2.69 remained within the acceptable range, and the RMSEA of 0.067 indicated good model approximation. The indices GFI (0.98) and AGFI (0.96) showed excellent global fit, while the comparative and incremental indices CFI (0.99), NFI (0.99), and NNFI (0.99) further confirmed the robustness and stability of the latent structure for brand differentiation.

The first-order confirmatory factor analysis for brand competitiveness yielded the strongest overall fit. The χ^2/df ratio of 1.57 and RMSEA of 0.039 indicated very low residual error and high model precision. The fit indices GFI (0.96), AGFI (0.94), CFI (1.00), NFI (0.99), and NNFI (0.99) uniformly exceeded recommended benchmarks, confirming the validity of the multidimensional construct of brand competitiveness.

Finally, the overall structural model integrating all constructs achieved highly satisfactory goodness-of-fit. The χ^2/df ratio of 1.61 and RMSEA of 0.040 demonstrated excellent parsimony and approximation accuracy. Global and

comparative indices including GFI (0.95), AGFI (0.92), CFI (0.99), NFI (0.98), and NNFI (0.99) all exceeded critical acceptance thresholds, providing strong empirical support for the proposed conceptual framework and confirming the theoretical coherence of the relationships among innovation orientation, brand differentiation, and brand competitiveness within the pharmaceutical industry context.

Table 4. Structural Equation Modeling Results: Path Coefficients, t-Statistics, and Explained Variance

Predictor Variable	Structural Relationship	Path Coefficient	t-Value	R^2	Significance Level	Result
Innovation Orientation	Innovation Orientation → Brand Differentiation	0.31	5.53	0.94	< 0.001	Supported
Innovation Orientation	Innovation Orientation → Brand Competitiveness	0.19	3.32	0.25	< 0.001	Supported
Brand Differentiation	Brand Differentiation → Brand Competitiveness	0.41	6.29	0.25	< 0.001	Supported
Innovation Orientation	Total (Direct + Indirect) Effect of Innovation Orientation on Brand Competitiveness	0.31	5.16	0.98	< 0.001	Supported

The structural equation modeling results demonstrate strong and statistically significant relationships among the study variables. Innovation orientation exerted a positive and significant effect on brand differentiation with a path coefficient of 0.31 and a t-value of 5.53, explaining 94% of the variance in brand differentiation (R^2 = 0.94). Furthermore, innovation orientation had a direct positive effect on brand competitiveness (β = 0.19, t = 3.32), while brand differentiation also exerted a substantial positive influence on brand competitiveness (β = 0.41, t = 6.29), together accounting for 25% of the variance in brand competitiveness (R^2 = 0.25). When both direct and indirect pathways were considered simultaneously, the total effect of innovation orientation on brand competitiveness reached 0.31 with a t-value of 5.16, explaining 98% of the variance (R^2 = 0.98). All estimated effects were statistically significant at the 0.001 level, confirming the central role of innovation orientation in enhancing brand competitiveness both directly and through the mediating influence of brand differentiation.

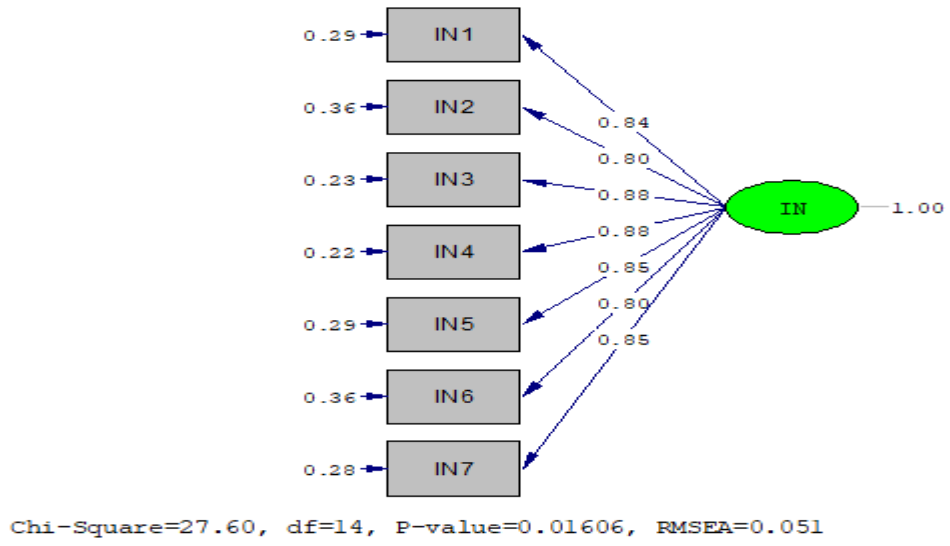

Figure 1. Innovation Orientation Model with Factor Loadings

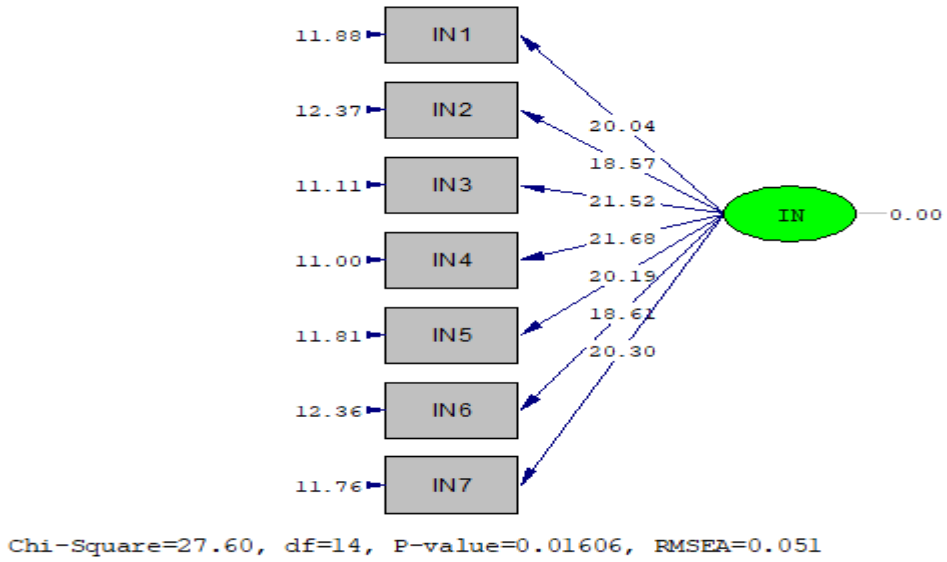

Figure 2. Innovation Orientation Model with T-Values

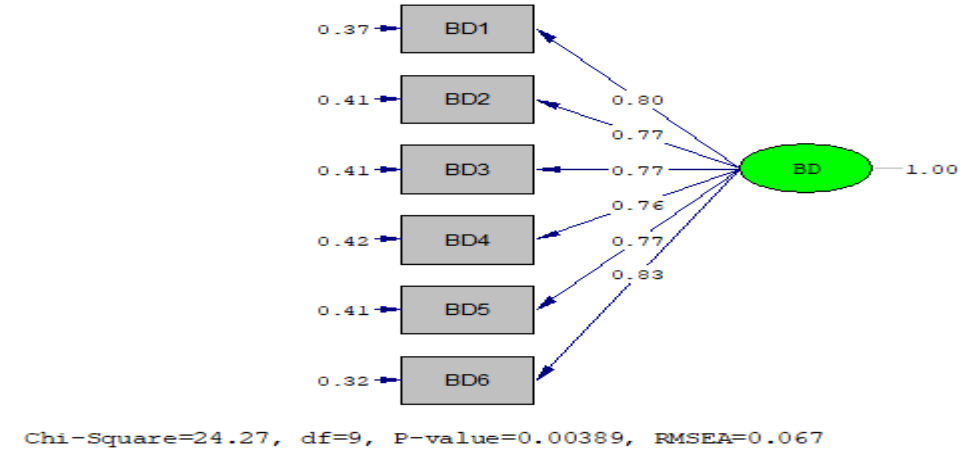

Figure 3. Innovation Brand Differentiation with Factor Loadings

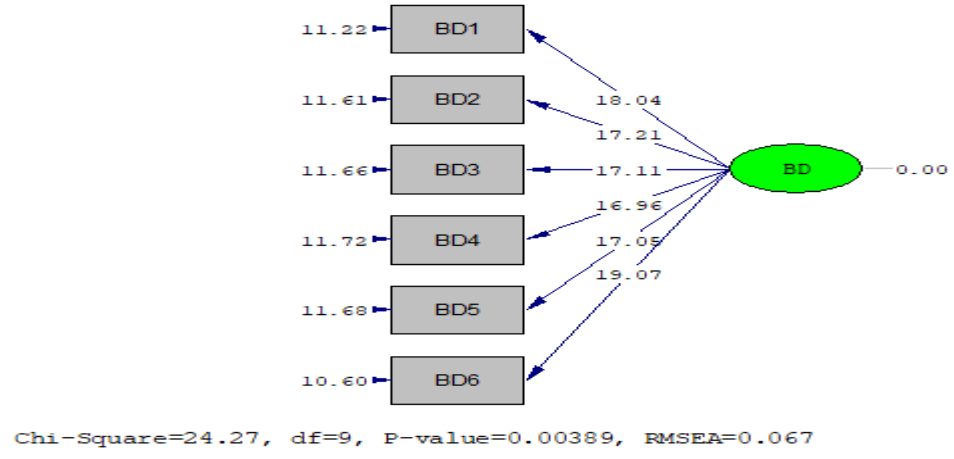

Figure 4. Innovation Brand Differentiation with T-Values

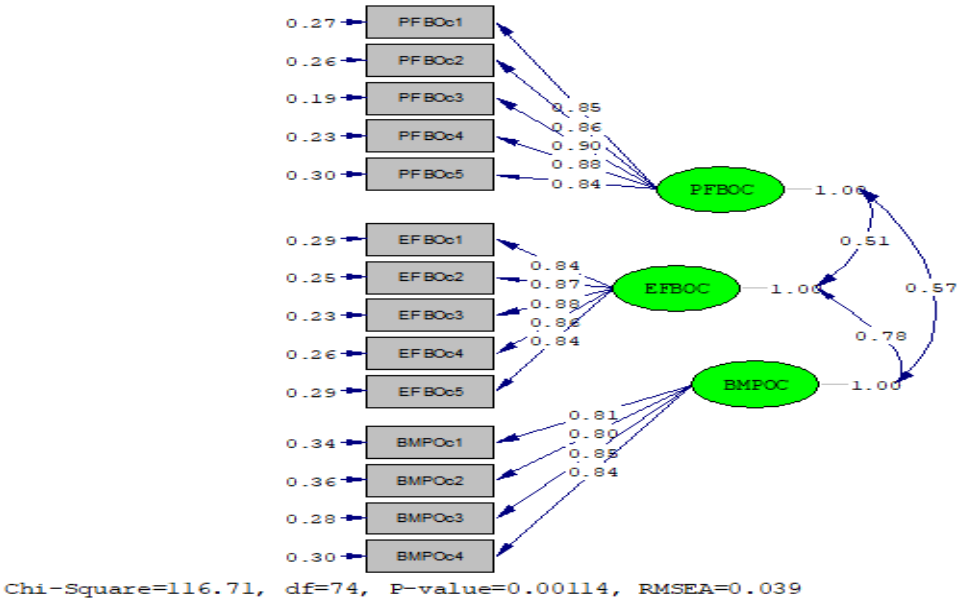

Figure 5. Innovation Brand Competitiveness with Factor Loadings

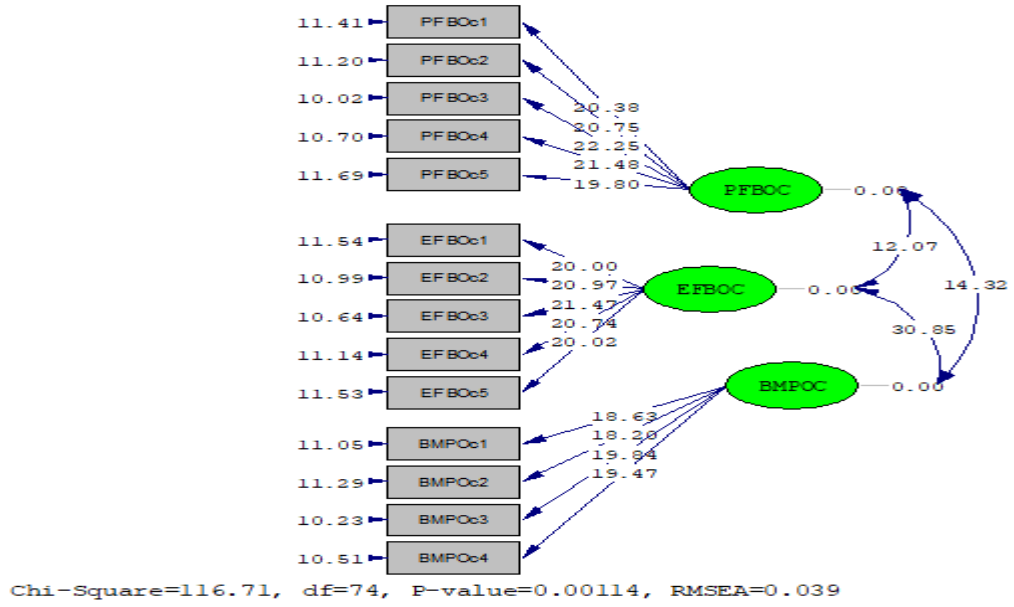

Figure 6. Innovation Brand Competitiveness with T-Values

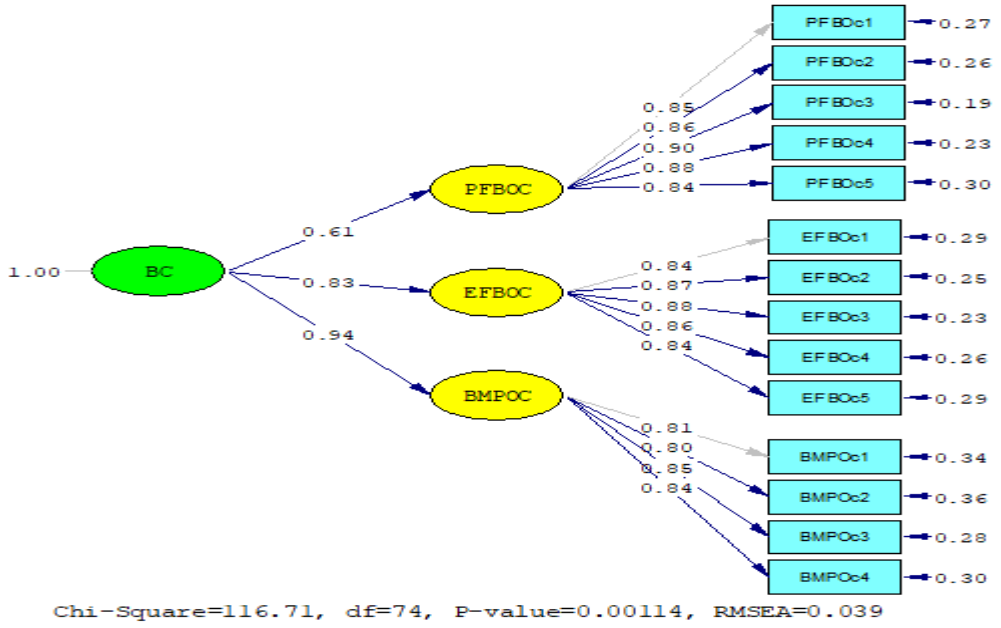

Figure 7. Innovation Overal Model with Factor Loadings

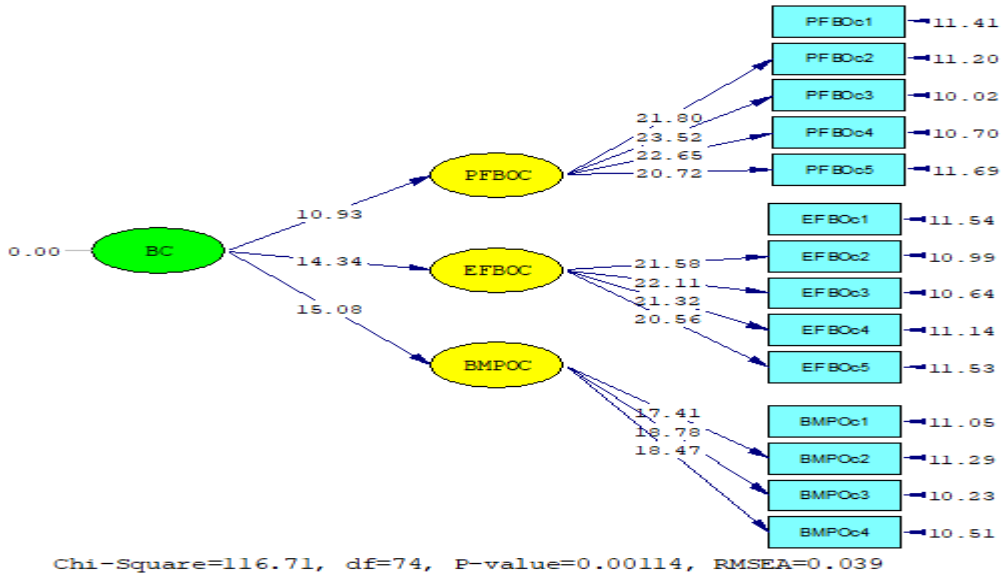

Figure 8. Innovation Overal Model with T-Values

Discussion and Conclusion

The findings of the present study provide robust empirical support for the proposed conceptual framework and confirm the pivotal role of innovation orientation in enhancing brand competitiveness, both directly and indirectly through brand differentiation. Structural equation modeling results demonstrated that innovation orientation exerted a significant positive effect on brand differentiation ($\beta = 0.31$, $t = 5.53$, $p < 0.001$), explaining a substantial proportion of variance in brand differentiation ($R^2 = 0.94$). This result underscores the argument that organizations that embed

innovation deeply within their strategic and cultural foundations are more capable of developing distinctive brand identities and value propositions. This outcome aligns closely with prior research indicating that innovation-oriented firms are more effective in creating unique offerings, strengthening brand meaning, and sustaining competitive advantage (3, 4). The exceptionally high explanatory power observed in this relationship suggests that, within the pharmaceutical industry, innovation orientation is not merely a contributing factor but a central driver of brand differentiation.

Moreover, the study revealed a statistically significant direct effect of innovation orientation on brand competitiveness ($\beta = 0.19$, $t = 3.32$, $p < 0.001$), as well as a stronger indirect effect mediated by brand differentiation, resulting in a total effect of $\beta = 0.31$ ($t = 5.16$, $p < 0.001$). Together, innovation orientation and brand differentiation accounted for 25% of the variance in brand competitiveness, while the combined direct and indirect pathways explained 98% of the variance in the overall model. These results reinforce the theoretical proposition that innovation orientation enhances organizational performance and market position primarily when it is effectively converted into brand-based advantages. This finding is consistent with the resource-based view and dynamic capability perspectives, which argue that innovation capabilities generate superior outcomes only when organizations successfully translate them into market-recognizable value (1, 2).

The significant mediating role of brand differentiation observed in this study highlights the strategic mechanism through which innovation orientation strengthens brand competitiveness. Innovation alone does not automatically yield competitive advantage unless it is accompanied by meaningful differentiation that resonates with customers and stakeholders. This conclusion corroborates previous research emphasizing that differentiation strategies are essential for converting innovation investments into sustainable market advantages (11, 12). In pharmaceutical markets, where products often exhibit functional similarities due to regulatory constraints and standardized formulations, differentiation increasingly depends on intangible brand attributes such as trust, credibility, technological leadership, and customer experience. The present findings support the argument that innovation orientation equips firms with the tools necessary to develop such intangible assets, thereby enhancing brand differentiation and, in turn, brand competitiveness.

The strong positive effect of brand differentiation on brand competitiveness ($\beta = 0.41$, $t = 6.29$, $p < 0.001$) further validates the central role of differentiation in contemporary branding strategy. This result is consistent with empirical studies demonstrating that differentiated brands achieve superior customer loyalty, stronger brand equity, and enhanced competitive positioning (7, 8). In pharmaceutical contexts, where consumer trust and professional endorsement are critical, effective differentiation fosters long-term relationships with healthcare providers, patients, and institutional buyers. By offering distinctive value propositions grounded in innovation, firms are able to strengthen brand associations and achieve sustainable market dominance.

The qualitative findings of the study reinforce these quantitative results by revealing that experts perceive knowledge-based identity, structural strength, market dynamism, continuous collaboration with global knowledge networks, and strategic R&D investment as core components of brand competitiveness and innovation orientation. These insights resonate with the literature emphasizing the importance of organizational learning, technological foresight, and global knowledge integration in sustaining competitive advantage (5, 6). Together, the qualitative and quantitative findings provide a coherent and comprehensive understanding of how innovation orientation, brand differentiation, and brand competitiveness interact within the pharmaceutical industry.

From a theoretical perspective, this study contributes to the branding and innovation literature by empirically validating a mediated model that integrates innovation orientation, brand differentiation, and brand competitiveness within a single structural framework. While prior studies have examined these constructs separately or in partial combinations, few have explicitly tested their interrelationships in a comprehensive model, particularly in pharmaceutical contexts and emerging economies (16, 20). The results extend existing knowledge by demonstrating that innovation orientation serves as a foundational strategic capability whose influence on competitiveness is substantially amplified through brand differentiation. This finding enriches the understanding of how intangible strategic resources interact to generate sustainable competitive advantage.

The present findings also align with recent research highlighting the growing importance of innovation-driven branding in digital and globalized markets. With the increasing influence of social media, electronic word-of-mouth, and digital engagement on brand reputation and consumer behavior, innovation orientation becomes even more critical for maintaining competitive relevance (18, 19). Firms that leverage innovation to enhance brand experiences and customer engagement are better positioned to achieve superior market outcomes. The study thus underscores the necessity for pharmaceutical companies to adopt integrated innovation and branding strategies to navigate intensifying global competition.

This study, while offering valuable insights, is subject to several limitations. First, the cross-sectional design restricts the ability to draw causal inferences regarding the dynamic relationships among innovation orientation, brand differentiation, and brand competitiveness. Second, the reliance on self-reported data may introduce common method bias and perceptual distortions. Third, the focus on the pharmaceutical industry within a single national context limits the generalizability of the findings to other industries and cultural environments.

Future studies should adopt longitudinal research designs to capture the evolving nature of innovation, branding, and competitiveness over time. Comparative cross-industry and cross-national investigations would enhance the generalizability of the proposed model. Researchers may also explore additional mediating and moderating variables, such as organizational culture, leadership style, technological capability, and market turbulence, to develop more nuanced explanations of competitive dynamics.

Managers and policymakers in the pharmaceutical sector should prioritize the development of innovation-oriented cultures, invest strategically in research and development, and align innovation initiatives with brand differentiation strategies. Organizations should strengthen mechanisms for knowledge integration, customer engagement, and brand communication to maximize the competitive returns of innovation investments. By systematically embedding innovation into brand strategy, firms can enhance long-term competitiveness and achieve sustainable market leadership.

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Authors' Contributions

All authors equally contributed to this study.

Declaration of Interest

The authors of this article declared no conflict of interest.

Ethical Considerations

All ethical principles were adheried in conducting and writing this article.

Transparency of Data

In accordance with the principles of transparency and open research, we declare that all data and materials used in this study are available upon request.

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