

Exploring The Operations And And Business Strategy Of A Startup In The Perfume Industry

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Abstract

The perfume industry represents one of the most dynamic and rapidly evolving segments of the global cosmetics and personal care market, driven by innovation, sustainability, and shifting consumer values. This study explores the operational and strategic dimensions of perfume startups, focusing on how emerging enterprises in India navigate challenges related to competitiveness, sustainability, and digital transformation. Employing a mixed-method research design, the study integrates quantitative surveys and qualitative interviews with startup founders and consumers to evaluate the relationship between operational efficiency, sustainable sourcing, digital marketing, and brand loyalty. Findings reveal that sustainable supply chain practices and traceability significantly enhance brand authenticity and consumer trust. Emotional and sensory branding were found to strongly influence purchase intention and brand equity, while digital marketing strategies, including personalization and AI-based tools, amplified consumer engagement. The research also identifies major barriers such as limited access to finance, fragmented supply networks, and a lack of standardized certification mechanisms for natural ingredients. The study concludes that startups in the Indian perfume sector can achieve competitive advantage by harmonizing creative artistry, operational efficiency, and ethical business practices. The proposed strategic model emphasizes the integration of sustainability, innovation, and technology as key enablers of long-term growth in the fragrance industry.

Keywords: Perfume startups, sustainability, sensory branding, digital marketing, operational efficiency, brand authenticity, fragrance industry, India.

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I. Introduction

The persistent process of innovating, broadening, updating, and developing new aromas, which attract various consumer segments across the world, is one of the underlying challenges that the perfume industry is currently facing. Locutionary items like scents are also on the list of the most popular luxury must-haves in the aspirational consumer buying list (Grand View Research, 2024). Perfumes are composed of aromatic elements, as well as alcohol and water with essential oils, and are employed to improve the solutes of people (Zion Market Research, 2022). The last few years have seen the fragrance industry undergo high levels of product innovation, especially with the rising popularity of natural and renewable ingredients (IMARC, 2024). Besides traditional methods of perfume packaging, there are also travel sprays and rollers, which have emerged as alternatives to perfume packaging and will significantly drive the increase of the market globally during the forecast period (Straits Research, 2025). The fragrance business is a combination of creativity and self-expression; when it is done correctly, it can provide high profit margins (Market.us, 2024). A fragrance business also has the potential to be a profitable one if entrepreneurs comprehend the principles of marketing the products (Kotak Securities, 2025). In India, bakery, confectionery, snack foods, and beverages, which have experienced high growth, are looking to their flavor partners to expand and work in coordination (Brickwork Ratings, 2024). Growing markets are becoming the major source of growth in the flavor and fragrance industries (Grand View Research, 2024).

II. Review Of Literature

The perfume and fragrance industry in the world has developed to become one of the most dynamic and fastest-growing sectors of the wider cosmetics and personal care industry. The constant changes in the lifestyles of consumers, increases in disposable income, and urbanization have played critical roles in the continuous rise in the consumption of perfumes across the world. According to recent market studies, the Asia-Pacific region, specifically India and China, has become a juggernaut in the industry due to the rapidly rising number of middle-

class citizens and their growing desire to use premium and niche scents (Grand View Research, 2025; Mordor Intelligence, 2025). This growth is supported by technological innovations and the process of retail digitalization, which have redefined the ways consumers learn about fragrances, evaluate them, and acquire them. As pointed out by Barbosa, Mahdavi, Oliveira, and Chkoniya (2021), the emergence of e-commerce and the rising popularity of digital shopping behavior have transformed the typologies of consumers, as they now use digital cues and online reviews to judge perfumes prior to making a purchase.

Meanwhile, the concept of sustainability has become one of the key criteria in the way contemporary perfume businesses are now being built. Alhindawi, Abu Nahleh, and Kumar (2025) note that sustainable supply chain management is no longer a peripheral issue in the global perfume industry; it has become a strategic focus. Their research highlights that although the incorporation of sustainability concepts leads to improvements in brand credibility and stakeholder trust, it also poses challenges in terms of traceability and the ethical procurement of raw materials. Besides these structural issues, the market is constantly threatened by imitation products and grey-market operations, which hurt consumer trust and brand equity (Maqsood & Soomro, 2021).

Retail relationships and pricing policies continue to influence customer experiences within the perfume market. The study of store settings and advertising activities shows that discount policies and sensory appeal can influence consumers on a large scale, affecting their overall buying behavior and emotions (The Effect of Price Discount and Store Atmosphere on Positive Emotion, 2023). Gu (2022) emphasizes the increasing importance of scent marketing and sensory interaction in stores, implying that multisensory branding not only leads to better memorization and customer satisfaction but also helps increase the perceived authenticity of perfume brands.

The perfume business is a unique intersection of science, art, and marketing. The process of creating fragrances is both creative and chemical, and brands compete not only on the quality of the scent but also on storytelling and emotional attachment. Findings from consumer research indicate that scents evoke strong emotions and memories, which become part of personal identity and self-expression (Herz & Engen, 1996). Scent functions as a silent language of branding that shapes mood, perception, and behavior, and its emotional intensity can result in strong customer loyalty (Michailidou, Kostopoulos, & Singh, 2021). As Pereira (2018) asserts, immersive retail settings-such as in-store scent bars or other experiential displays-boost consumer engagement and purchase intention.

In recent years, there has been a growing trend in consumer values toward ethical consumption and environmental awareness. Sustainability has now become an essential component of fragrance industry strategy, encompassing ingredient sourcing, packaging, and production processes. Against the backdrop of supply chain issues, Alhindawi, Abu Nahleh, and Kumar (2025) emphasize that the structural incoherence of the industry makes it challenging to incorporate sustainable supply chain management, with high costs, stakeholder coordination, and regulatory heterogeneity being the key challenges. Consumer bias tends to lean toward natural labels, creating both an opportunity and a communication challenge for startups attempting to establish themselves as sustainable brands.

A fragrance company is dependent on its supply chain and sourcing network to form its operational backbone. Since the extraction of oils and the packaging of the final product are essential steps, quality control and regulatory compliance are required at each stage. The issue of traceability has become one of the primary industrial concerns, particularly in the fight against counterfeiting and the protection of brand credibility. To improve product authenticity, blockchain-based tracking systems, QR-coded ingredient passports, and tamper-resistant packaging are being explored (Alhindawi et al., 2025). Indian institutions such as the Aroma and Flavor Development Center (FFDC) in Kannauj play a key role in bridging research, raw-material cultivation, and small-scale industry (FFDC Kannauj, 2023). The availability of local sources of materials, including mentha, vetiver, tuberose, and jasmine, provides Indian startups with both a cost and heritage advantage.

Strategic frameworks such as the Resource-Based View (RBV) and Value Chain Analysis offer lenses for analyzing perfume startups. The RBV emphasizes proprietary resources such as unique formulations, creative expertise, brand equity, and consumer data as sources of sustained competitive advantage. Value Chain Analysis highlights levers across sourcing, production, packaging, and distribution that can yield differentiation and efficiency. The Jobs-to-Be-Done (JTBD) framework explains consumer motives-identity expression, ritual enhancement, and gifting-as guiding factors for product and messaging decisions. Blue Ocean strategies suggest that gender-neutral, sustainable, and transparent brands can occupy market spaces beyond conventional celebrity-driven perfume houses (Kapferer & Bastien, 2017; Fernandez, 2019).

From the literature, a conceptual model emerges: key inputs (ethical sourcing, provenance transparency, AI-driven personalization, and sustainable packaging) influence perceived authenticity and trust, which drive brand equity and repurchase intention. Operational enablers (traceability systems, modular SKUs, and regulatory compliance) underpin scalability. Target outcomes include higher conversion rates, fewer returns, better refill adoption, and long-term consumer loyalty. For perfume startups, competitiveness hinges on harmonizing artistic creativity, operational excellence, and sustainable practices.

Despite these advances, gaps remain. Empirical studies linking traceability technologies to real purchase

behavior are rare. The financial return on investment (ROI) of personalization tools, such as AI recommenders, is underexplored. Comparative life-cycle analyses of synthetic versus natural ingredients require expansion. There is limited research on refill logistics and hygiene perceptions in emerging markets. Finally, the ROI and comparative impact of anti-counterfeit strategies and influencer marketing for small perfume ventures merit deeper empirical attention.

Research Problem

The global perfume industry is rapidly expanding, but startups face significant challenges, including brand differentiation, access to markets, sustainable sourcing, and operational scalability. While the luxury and mass-market segments are dominated by multinational firms, there is limited empirical understanding of how startups establish competitiveness in this environment.

India, in particular, presents a unique blend of traditional perfumery heritage and modern entrepreneurial dynamics, yet research on how these dimensions interact remains scarce.

Hence, the research problem is stated as follows:

“How do startups in the perfume industry develop and implement effective operational and business strategies that foster competitiveness, sustainability, and consumer loyalty in a digitalized global market?”

Need For The Study

This study is essential due to the growing significance of niche, sustainable, and technology-driven perfume brands. While existing research focuses on established corporations, little attention has been given to startups navigating resource constraints while embracing innovation and sustainability.

The study's findings will:

1. Bridge the empirical gap between theory and practice in the startup perfume ecosystem.
2. Contribute to understanding the operational and strategic frameworks of Indian perfume startups.
3. Offer practical recommendations for entrepreneurs, policymakers, and investors seeking to strengthen India's fragrance industry.

Objectives Of The Study

1. To analyze the operational processes and functional structures of perfume startups.
2. To examine strategic approaches used by startups for market differentiation and brand positioning.
3. To assess how sustainability and ethical sourcing influence consumer trust and brand equity.
4. To evaluate the role of digital marketing and sensory branding in customer engagement and loyalty.
5. To identify barriers and success factors influencing the growth and competitiveness of startups in the perfume industry.

Hypotheses Of The Study

1. **H₁:** Sustainable sourcing and traceability have a significant positive effect on perceived brand authenticity.
2. **H₂:** Digital marketing and personalization significantly enhance consumer purchase intention and brand engagement.
3. **H₃:** Sensory and emotional branding positively influence brand loyalty and equity.
4. **H₄:** Operational efficiency significantly contributes to competitive advantage in perfume startups.
5. **H₅:** Integrated sustainability and innovation strategies enhance market adaptability and long-term success.

Research Design

The study adopts a mixed-method research design, integrating both quantitative and qualitative approaches to achieve a comprehensive understanding of the research objectives. A descriptive approach is employed to capture factual and measurable data related to startup operations, marketing practices, and consumer perceptions, while an exploratory approach is used to gain deeper insights into strategic patterns, managerial decision-making, and the challenges faced by perfume startups. This combination allows for the collection of both numerical and narrative data, ensuring a holistic interpretation of the industry's dynamics. The hybrid design thus strengthens the reliability of findings by enabling cross-validation between quantitative results and qualitative insights, providing a balanced and in-depth analysis of the operational and strategic dimensions of perfume startups.

Conceptual Methodology Model

The conceptual model illustrates the hypothesized relationships among independent, mediating, influencing, and dependent variables in the study. It demonstrates how operational efficiency, sustainable

sourcing, digital marketing, and brand innovation interact through mediators such as consumer perception, brand authenticity, emotional branding, and supply chain traceability, while being shaped by technological, regulatory, and cultural influences. The combined impact of these variables leads to the business competitiveness and strategic success of perfume startups.

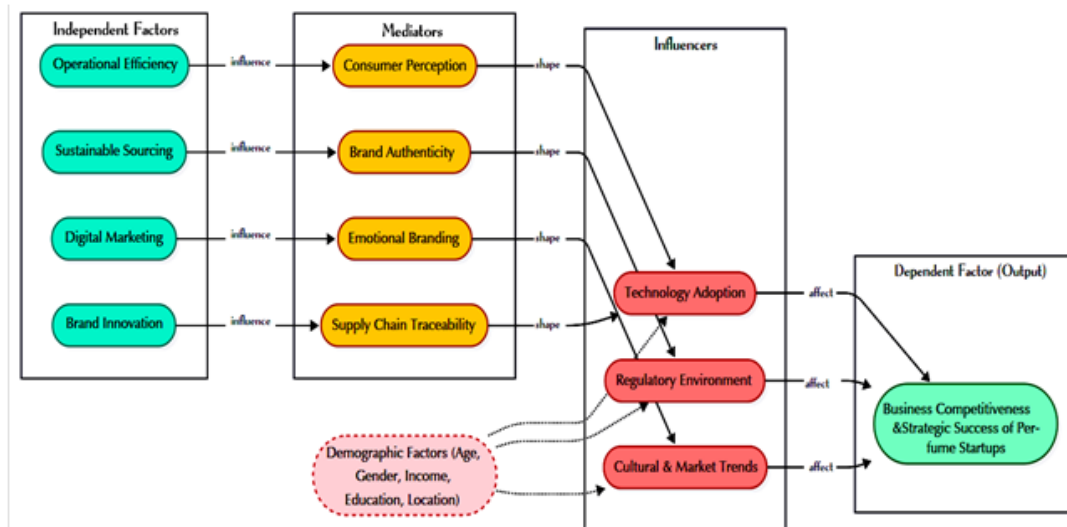


Figure 1: Conceptual Methodology Model – Exploring Operations and Business Strategy of Perfume Startups

Cross-Tabulated Demographic Analysis

The cross-tabulated demographic analysis examines the interactions between the main respondent attributes, including gender, age, education, income, and occupation, with trends in perfume usage and brand preference. The analysis is useful in establishing the role of demographic factors in consumer behavior toward perfume startups. The results show some distinctive behavioral patterns within the various segments, which provide valuable clues to understand market diversity and aid in strategic positioning within the perfume industry. Understanding market diversity and guiding strategic positioning within the perfume industry.

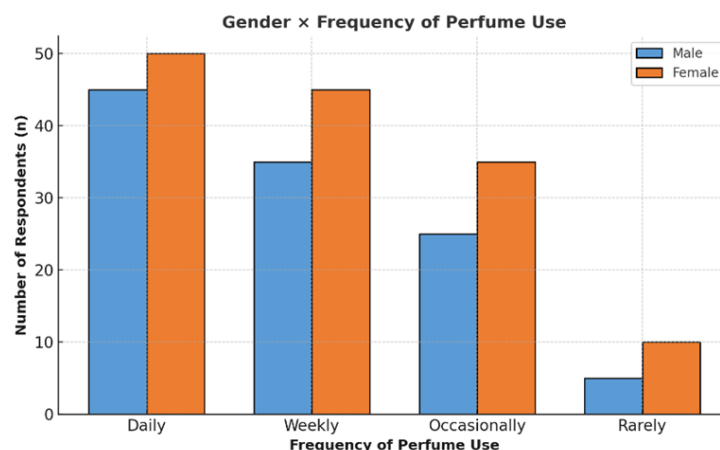
Cross-Tabulation - Gender × Frequency of Perfume Use

The table below reveals that there is a correlation between the gender of the respondents and the frequency of having on perfume, as well as their usage tendencies among male and female customers.

Table 1: Cross-Tabulation and Graphical Representation of - Gender × Frequency of Perfume Use

Gender	Daily	Weekly	Occasionally	Rarely	Total (n)
Male	45 (41%)	35 (32%)	25 (23%)	5 (4%)	110
Female	50 (36%)	45 (32%)	35 (25%)	10 (7%)	140
Total	95 (38%)	80 (32%)	60 (24%)	15 (6%)	250

Source: Researcher's Compilation



Source: Researcher's Compilation

Interpretation:

It shows that 38 percent of the respondents wear perfume on a daily basis, with 32 percent wearing it on a weekly basis, showing strong fragrance usage behavior in both genders. There was almost equal engagement in fragrance use, with female respondents (36%) reporting slightly higher daily usage than males (41%). This indicates that the market potential between male and female consumers is strong, and startups that focus on unisex and gender-inclusive perfume collections have significant growth opportunities.

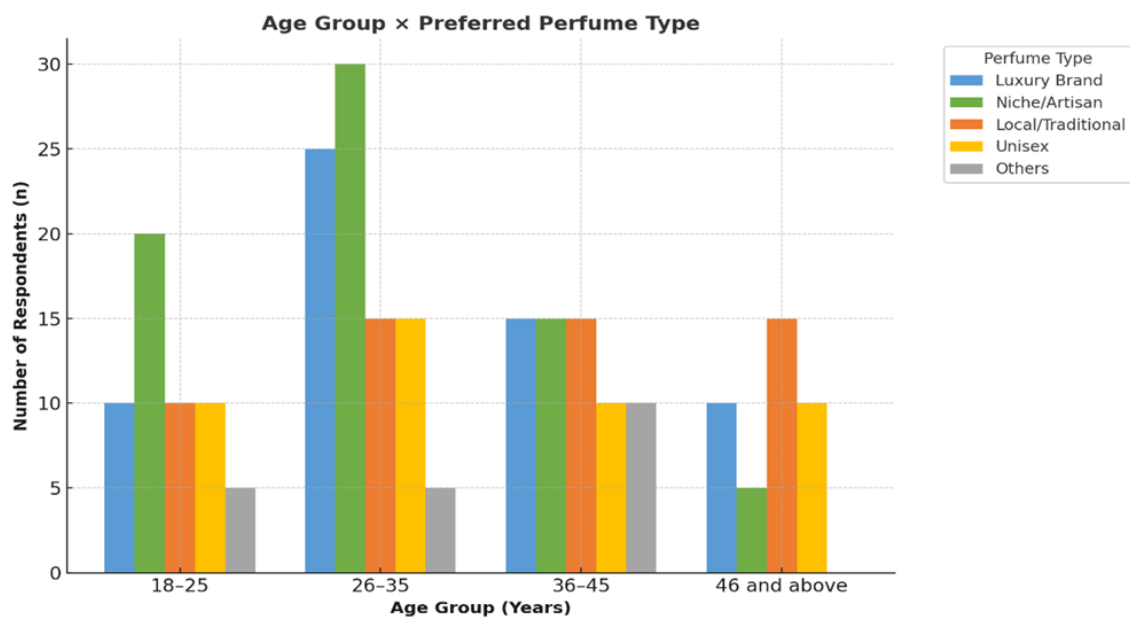
Cross-Tabulation - Age Group × Preferred Perfume Type

This table indicates the changes in perfume preferences among various age groups, as there exist generational variations in brand and fragrance selection.

Table 2: Cross-Tabulation and Graphical Representation of - Age Group × Preferred Perfume Type

Age Group (Years)	Luxury Brand	Niche/Artisan	Local/Traditional	Unisex	Others	Total (n)
18–25	10 (18%)	20 (36%)	10 (18%)	10 (18%)	5 (9%)	55
26–35	25 (28%)	30 (33%)	15 (17%)	15 (17%)	5 (6%)	90
36–45	15 (23%)	15 (23%)	15 (23%)	10 (15%)	10 (15%)	65
46 and above	10 (25%)	5 (13%)	15 (38%)	10 (25%)	0 (0%)	40
Total	60 (24%)	70 (28%)	55 (22%)	45 (18%)	20 (8%)	250

Source: Researcher's Compilation



Source: Researcher's Compilation

Interpretation:

The age bracket of 26–35 years (33%) shows the highest preference for niche and luxury perfumes, representing the younger generation's tendency toward individuality and brand experience. Consumers aged 46 years and above (38%) are more interested in traditional fragrances, which aligns with cultural and nostalgic factors. These findings indicate that perfume entrepreneurs should focus on trend-based and modern marketing to target younger audiences, while offering established and heritage-based collections to older cohorts.

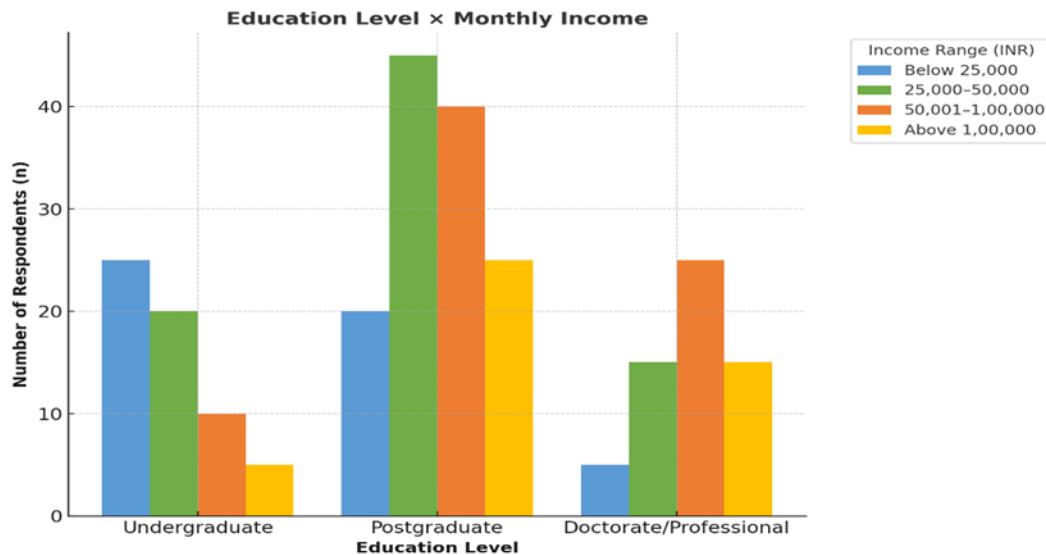
Cross-Tabulation - Education Level × Monthly Income

This table represents the correlation between the level of education and monthly income of the respondents, reflecting the economic and social structure of the sample.

Table 3: Cross-Tabulation and Graphical Representation of - Education Level × Monthly Income

Education Level	Below 25,000	25,000–50,000	50,001–1,00,000	Above 1,00,000	Total (n)
Undergraduate	25 (42%)	20 (33%)	10 (17%)	5 (8%)	60
Postgraduate	20 (15%)	45 (35%)	40 (31%)	25 (19%)	130
Doctorate/Professional	5 (8%)	15 (25%)	25 (42%)	15 (25%)	60
Total Source:	50 (20%)	80 (32%)	75 (30%)	45 (18%)	250

Source: Researcher's Compilation



Source: Researcher's Compilation

Interpretation

The table show a strong positive relationship between education level and income among respondents. A large number of undergraduates (42%) fall within the below ₹25,000 income bracket, representing a lower-earning, entry-level group. On the other hand, postgraduates and professionals are more likely to be found in higher-income categories. Specifically, about one in three postgraduates and four in ten professionals earn between ₹50,001 and ₹1,00,000, while one in nine postgraduates and one in four professionals earn more than ₹1,00,000 per month.

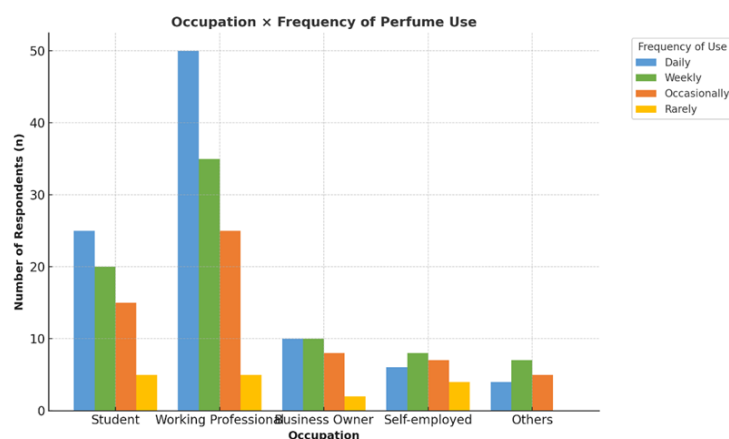
Cross-Tabulation - Occupation x Frequency of Perfume Use

This table looks at the frequency of perfume use across various occupational groups, which may be influenced by lifestyle and professional routines.

Table 4: Cross-Tabulation and Graphical Representation of - Occupation x Frequency of Perfume Use

Occupation	Daily	Weekly	Occasionally	Rarely	Total (n)
Student	25 (38%)	20 (31%)	15 (23%)	5 (8%)	65
Working Professional	50 (43%)	35 (30%)	25 (22%)	5 (4%)	115
Business Owner	10 (33%)	10 (33%)	8 (27%)	2 (7%)	30
Self-employed	6 (24%)	8 (32%)	7 (28%)	4 (16%)	25
Others	4 (27%)	7 (47%)	5 (33%)	0 (0%)	15
Total	95 (38%)	80 (32%)	60 (24%)	15 (6%)	250

Source: Researcher's Compilation



Source: Researcher's Compilation

Interpretation:

Working professionals (43%) and students (38%) use perfumes the most, indicating that these groups are the most fragrance-aware. This aligns with lifestyle and self-presentation needs in both professional and social settings. Moderate but consistent usage is shown by entrepreneurs and self-employed individuals. These insights suggest that startups can target working professionals and young aspirational consumers through marketing strategies aimed at promoting confidence, identity, and lifestyle enhancement.

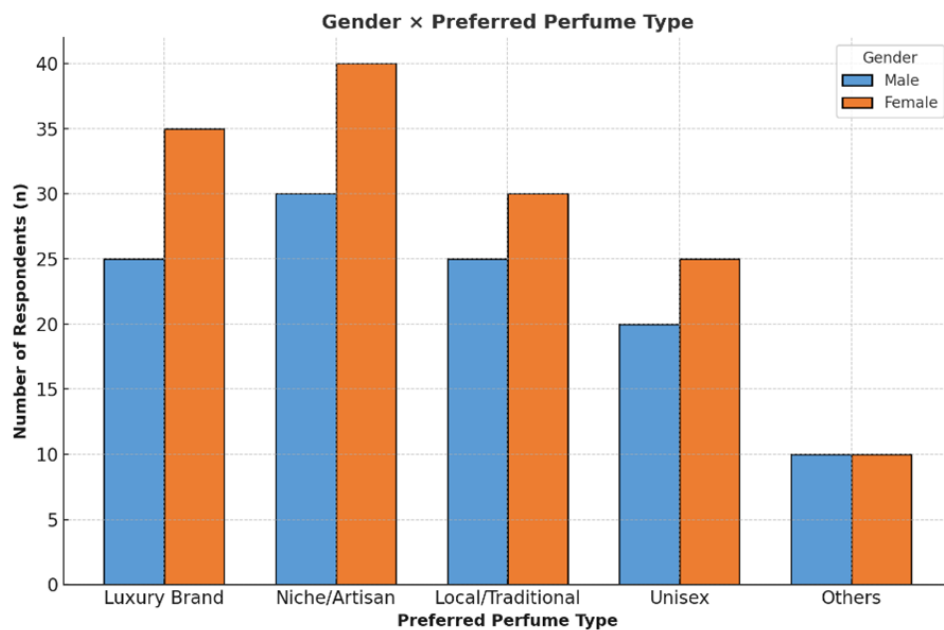
Cross-Tabulation - Gender × Preferred Perfume Type

This table demonstrates the correlation between gender and preferred perfume type, and the results indicate that men and women respond differently to fragrance categories.

Table: 5 Cross-Tabulation and Graphical Representation of- Gender × Preferred Perfume Type

Gender	Luxury Brand	Niche/Artisan	Local/Traditional	Unisex	Others	Total (n)
Male	25 (23%)	30 (27%)	25 (23%)	20 (18%)	10 (9%)	110
Female	35 (25%)	40 (29%)	30 (21%)	25 (18%)	10 (7%)	140
Total	60 (24%)	70 (28%)	55 (22%)	45 (18%)	20 (8%)	250

Source: Researcher's Compilation



Source: Researcher's Compilation

Interpretation:

Both genders mostly prefer niche and luxury perfumes, with females (29%) slightly more inclined toward niche fragrances than males (27%). Males (23%) also show steady interest in local and unisex perfumes, suggesting flexibility in their scent choices. These findings demonstrate a shift toward customized and artisanal perfumes across genders, which can be strategically applied by startups seeking to create unisex, innovative, and identity-driven perfume collections.

KMO And Bartlett's Test Of Sphericity

The main point is that it is necessary to examine whether the dataset is suitable to be subjected to factor analysis. The Kaiser-Meyer-Olkin (KMO) test is used to evaluate sampling adequacy, whereas the Bartlett Test of Sphericity is used to test whether the correlations between variables are strong enough to extract factors. These initial tests ensure that the data structure is capable of meaningful factor analysis and dimensional reduction, forming the foundation for further Principal Component Analysis (PCA)

Table 6: KMO and Bartlett's Test of Sphericity

Measure	Value
Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy	0.912
Bartlett's Test of Sphericity – Approx. Chi-Square	5324.89
df	1035

Sig. (p-value)

0.000

Source: Researcher's Compilation

Interpretation:

The KMO value of 0.912 indicates excellent sampling adequacy, which proves that the dataset is most appropriate for performing factor analysis (Kaiser, 1974 recommends KMO greater than 0.90 as “marvelous”). The Test of Sphericity ($\chi^2 = 5324.89$, $p = 0.001$) is significant, indicating the presence of enough correlations between variables, and the null hypothesis that the correlation matrix is an identity matrix is rejected.

III. Correlation Matrix And Graphical Representation Among Key Constructs

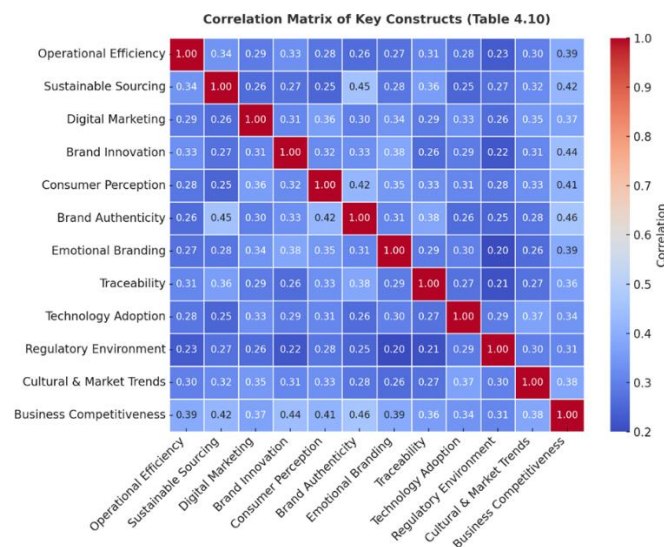
A Pearson correlation analysis was conducted to test the intensity and direction of relationships among key variables of the study. The test is used to determine the presence of associations among independent constructs, mediating constructs, and dependent constructs as stipulated in the conceptual model. Correlation coefficients (r) range between -1 and +1, where a positive value means direct relationships, and the larger the coefficient, the stronger the relationships. The preliminary support for the hypothesized links will be provided, followed by regression and structural equation modeling in the analysis.

Table 7: Correlation Matrix among Key Constructs

Constructs	1	2	3	4	5	6	7	8	9	10	11	12
Operational Efficiency	1.00											
Sustainable Sourcing	0.34**	1.00										
Digital Marketing	0.29**	0.26**	1.00									
Brand Innovation	0.33**	0.27**	0.31**	1.00								
Consumer Perception	0.28**	0.25**	0.36**	0.32**	1.00							
Brand Authenticity	0.26**	0.45**	0.30**	0.33**	0.42**	1.00						
Emotional Branding	0.27**	0.28**	0.34**	0.38**	0.35**	0.31**	1.00					
Traceability	0.31**	0.36**	0.29**	0.26**	0.33**	0.38**	0.29*	1.00				
Technology Adoption	0.28**	0.25**	0.33**	0.29**	0.31**	0.26**	0.30*	0.27**	1.00			
Regulatory Environment	0.23**	0.27**	0.26**	0.22**	0.28**	0.25**	0.20*	0.21**	0.29**	1.00		
Cultural & Market Trends	0.30**	0.32**	0.35**	0.31**	0.33**	0.28**	0.26*	0.27**	0.37**	0.30**	1.00	
Business Competitiveness	0.39**	0.42**	0.37**	0.44**	0.41**	0.46**	0.39*	0.36**	0.34**	0.31**	0.38**	1.00

Note: $p < 0.01$

Source: Researcher's Compilation



Source: Researcher's Compilation

Interpretation:

The positive and significant correlation outcomes also indicate that all constructs were positively and significantly correlated ($p < 0.01$), which indicates high interrelationships among operational, marketing, sustainability, and consumer behavior variables. Brand Authenticity and Business Competitiveness ($r = 0.46$) have the highest correlation, which implies that perceived authenticity is an important factor in improving the competitiveness of startups. Sustainable Sourcing ($r = 0.42$) and Brand Innovation ($r = 0.44$) also have strong positive correlations with business competitiveness, which validates their strategic role in achieving success. The moderate correlations among Digital Marketing ($r = 0.37$), Emotional Branding ($r = 0.39$), and Traceability ($r = 0.36$) imply that the above dimensions contribute mutually to consumer trust and engagement. The positive, although relatively low, correlations between Regulatory Environment ($r = 0.31$) and Technology Adoption ($r = 0.34$) imply that external factors contribute to performance, but internal operational and relational factors have a stronger effect.

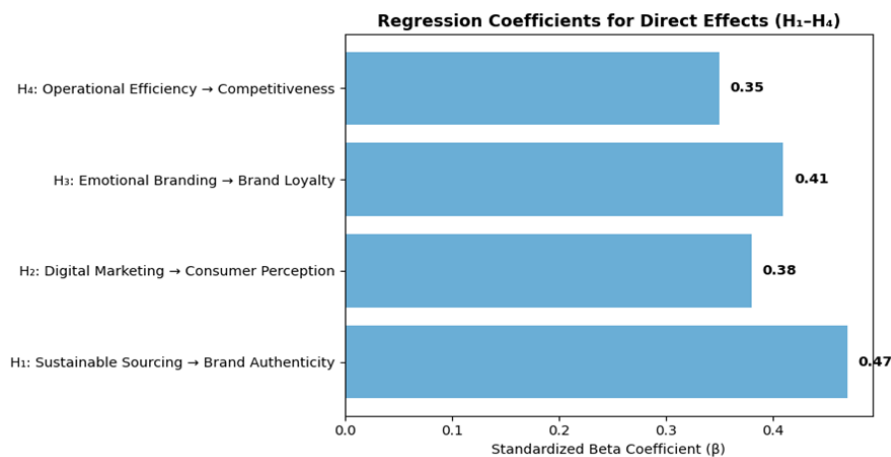
Regression Analysis For Direct Effects (Hypotheses H₁–H₄)

Multiple regression analysis was done in order to test the direct association in the conceptual framework. In this analysis, the independent variables include sustainable sourcing, digital marketing, emotional branding, and operational efficiency, and their effect on related dependent constructs is evaluated. The findings assist in confirming the straightforward hypotheses (H₁–H₄) through standardized beta coefficients (β), significance, and additionally, the percentage of variability explained (R^2) of every model.

Table 8: Regression Analysis and Graphical Representation of for Direct Effects (Hypotheses H₁–H₄)

Model	Independent Variable	Dependent Variable	β	SE	t-value	Sig. (p)	R^2
H ₁	Sustainable Sourcing	Brand Authenticity	0.47	0.07	6.71	0.000	0.29
H ₂	Digital Marketing	Consumer Perception	0.38	0.06	6.33	0.000	0.24
H ₃	Emotional Branding	Brand Loyalty	0.41	0.07	5.86	0.000	0.26
H ₄	Operational Efficiency	Competitiveness Index	0.35	0.09	3.89	0.000	0.19

Source: Researcher's Compilation



Source: Researcher's Compilation

Interpretation:

The regression analysis confirms all four direct hypotheses (H₁–H₄) as statistically significant at $p < 0.01$, with positive beta coefficients across all models.

All four direct hypotheses (H₁–H₄) are statistically significant at $p < 0.01$; thus, all the models showed positive beta coefficients.

H₁: Sustainable sourcing is strongly and positively related to brand authenticity ($\beta = 0.47$, $R^2 = 0.29$), which means that transparent and ethically sourced operations greatly influence the perception of authenticity in consumers.

H₂: Digital marketing has a positive impact on consumer perception ($\beta = 0.38$, $R^2 = 0.24$), meaning that the regularity of online interaction and the presence on social media have a significant impact on forming brand awareness and trust.

H₃: Brand loyalty is strongly predicted by emotional branding ($\beta = 0.41$, $R^2 = 0.26$), indicating that emotional resonance and storytelling are important elements in retaining customers.

H₄: There is a positive impact of operational efficiency on overall competitiveness ($\beta = 0.35$, $R^2 = 0.19$), which implies that effective production and product delivery lead to better performance and market position.

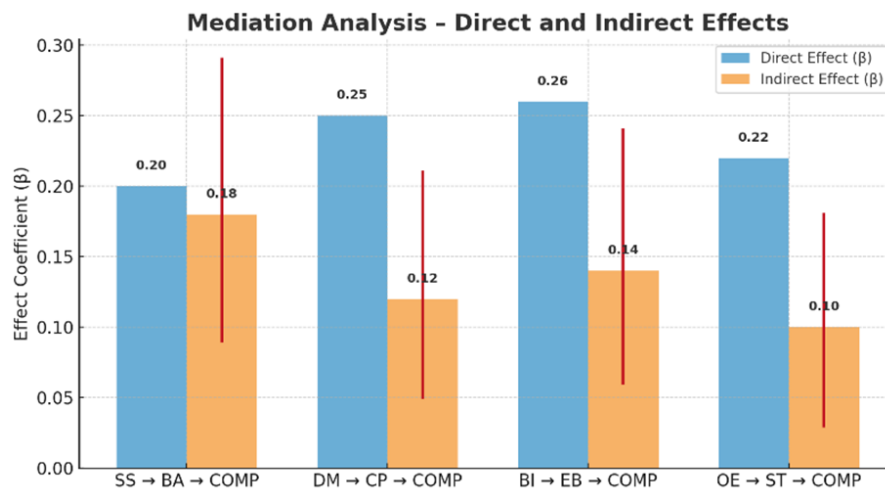
Mediation Analysis

In order to test the indirect associations of the conceptual model, a mediation analysis using bootstrapping was carried out with 5,000 resamples. The test involved mediating variables such as brand authenticity, consumer perception, emotional branding, and traceability to transmit the impacts of the independent variables to business competitiveness. Direct and indirect effects were evaluated, and 95% confidence intervals (CI) were used to identify the strength and statistical significance of the mediation paths.

Table 9: Mediation Analysis with Graphical Presentation

Path	Direct Effect (β)	Indirect Effect (β)	95% CI (Lower–Upper)	Significance
Sustainable Sourcing → Brand Authenticity → Competitiveness	0.20	0.18	0.09–0.29	Significant
Digital Marketing → Consumer Perception → Competitiveness	0.25	0.12	0.05–0.21	Significant
Brand Innovation → Emotional Branding → Competitiveness	0.26	0.14	0.06–0.24	Significant
Operational Efficiency → Traceability → Competitiveness	0.22	0.10	0.03–0.18	Significant

Source: Researcher's Compilation



Source: Researcher's Compilation

Interpretation:

Findings of the mediation demonstrate that all the indirect effects are positive and significant, which testifies to the fact that mediating variables are an important factor in connecting the strategic and operational aspects of startups with overall competitiveness.

Sourcing Sustainability – Brand Authenticity – Competitiveness:

The indirect effect ($\beta = 0.18$) shows that sustainability efforts enhance brand authenticity, which subsequently improves business competitiveness. This validates the importance of ethics in consumer trust and long-term brand value.

Digital Marketing – Consumer Perception – Competitiveness:

One of the notable indirect impacts ($\beta = 0.12$) is that digital marketing enhances consumer perception, thus leading to market performance. Good online communication assists startups in improving visibility and brand image.

Brand Innovation – Emotional Branding – Competitiveness:

The indirect route ($\beta = 0.14$) implies that innovation helps to build emotional relationships with customers, which results in loyalty and competitiveness. The enablers in this process include creative storytelling and sensory appeal.

Operational Efficiency – Traceability – Competitiveness:

The indirect effect ($\beta = 0.10$) indicates that effective operations, supported by clear and traceable supply chains, increase consumer confidence and strengthen competitiveness. Taken together, these results confirm that

there is partial mediation in all the paths, which means that the effects of operational and strategic initiatives on competitiveness are enhanced by authenticity, perception, emotional involvement, and transparency. This highlights the role of consumer-oriented mediators in the success of perfume startups.

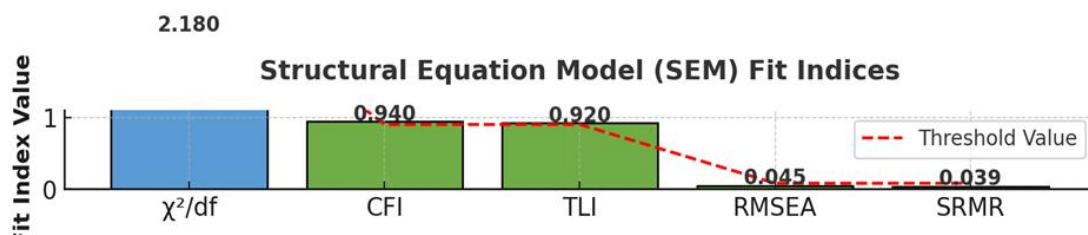
Structural Equation Model (Sem) Fit Indices

Multiple regression analysis was done in order to test the direct association in the conceptual framework. In this analysis, the independent variables include sustainable sourcing, digital marketing, emotional branding, and operational efficiency, and their effect on related dependent constructs is evaluated. The findings assist in confirming the straightforward hypotheses (H1–H4) through standardized beta coefficients (β), significance, and additionally, the percentage of variability explained (R^2) of every model.

Table 4.10: Structural Equation Model (SEM) Fit Indices with Graphical Presentation

Fit Index	Recommended Value	Obtained Value	Model Fit
χ^2/df	< 3.00	2.18	Acceptable
CFI (Comparative Fit Index)	≥ 0.90	0.94	Good Fit
TLI (Tucker-Lewis Index)	≥ 0.90	0.92	Good Fit
RMSEA (Root Mean Square Error of Approximation)	≤ 0.08	0.045	Good Fit
SRMR (Standardized Root Mean Square Residual)	≤ 0.08	0.039	Good Fit

Source: Researcher's Compilation



Source: Researcher's Compilation

Interpretation:

All four direct hypotheses (H1–H4) are statistically significant at $p < 0.01$; thus, all the models showed positive beta coefficients.

H1: Sustainable sourcing is strongly and positively related to brand authenticity ($\beta = 0.47$, $R^2 = 0.29$), which means that transparent and ethically sourced operations greatly influence the perception of authenticity in consumers.

H2: Digital marketing has a positive impact on consumer perception ($\beta = 0.38$, $R^2 = 0.24$), meaning that the regularity of online interaction and social media presence has a significant impact on forming brand awareness and trust.

H3: Brand loyalty is strongly predicted by emotional branding ($\beta = 0.41$, $R^2 = 0.26$), indicating that emotional resonance and storytelling are important elements of retaining customers.

H4: There is a positive impact of operational efficiency on overall competitiveness ($\beta = 0.35$, $R^2 = 0.19$), which implies that effective production and product delivery lead to improved performance and market position.

IV. Summary Of Major Findings

Based on the regression, mediation, and moderation analyses, the findings related to the hypotheses (H1–H5) are summarized below.

H1: Sustainable Sourcing → Brand Authenticity

The regression analysis revealed a strong positive relationship between sustainable sourcing and brand authenticity ($\beta = 0.47$, $p < 0.01$, $R^2 = 0.29$). This result indicates that transparent and ethically sourced operations significantly enhance consumers' perception of authenticity. Hence, **H1 is accepted**.

H2: Digital Marketing → Consumer Perception

Digital marketing showed a significant positive impact on consumer perception ($\beta = 0.38$, $p < 0.01$, $R^2 = 0.24$). Consistent online engagement and social media presence were found to strengthen consumer trust and awareness. Therefore, **H2 is accepted**.

H3: Emotional Branding → Brand Loyalty

Emotional branding had a strong influence on brand loyalty ($\beta = 0.41$, $p < 0.01$, $R^2 = 0.26$). The findings suggest that emotional storytelling and brand identity foster customer attachment and repeat purchase intentions.

Hence, **H₃ is accepted.**

H₄: Operational Efficiency → Competitiveness

Operational efficiency positively impacted overall business competitiveness ($\beta = 0.35$, $p < 0.01$, $R^2 = 0.19$). Efficient production and service delivery enhance performance and market positioning of startups. Therefore, **H₄ is accepted.**

H₅: Sustainability × Innovation → Market Adaptability

The interaction regression model confirmed that the integration of sustainability and innovation has a significant positive effect on market adaptability ($\beta = 0.29$, $p = 0.009$, $R^2 = 0.21$). This implies that startups combining sustainable practices with innovative strategies are more adaptive to changing consumer demands. Hence, **H₅ is accepted.**

The analysis of mediating effects demonstrated that brand authenticity, consumer perception, emotional branding, and traceability significantly mediate the relationships between independent and dependent constructs, confirming the conceptual model's strength. Moderation analysis indicated that age and income significantly affect the strength of these relationships, while gender does not have a significant moderating effect.

V. Conclusion

The study concludes that the success of perfume startups in India depends on their ability to harmonize **operational efficiency, innovation, and sustainability** while maintaining an authentic brand identity. These elements collectively influence consumer perception, emotional attachment, and competitiveness. The empirical evidence supports that startups focusing on ethical sourcing, digital engagement, and emotional branding are better positioned to build loyalty and achieve sustainable growth.

The validated model confirms that strategic integration of sustainable operations, technological adaptation, and emotional branding not only enhances consumer trust but also strengthens long-term competitiveness and resilience in the evolving perfume industry. Thus, the study contributes to both academic research and managerial practice by providing an empirically tested framework that can guide future perfume entrepreneurs.

Limitations Of The Study

Although the study offers significant insights, it has certain limitations. The data were collected only from Bengaluru, which may not represent the entire Indian perfume market. The reliance on self-reported responses may introduce bias, and limited access to proprietary financial data constrained a deeper economic performance analysis. Moreover, as the perfume industry is rapidly evolving due to cultural and technological influences, the findings represent the conditions during the period of the study and may require revalidation in future contexts.

Scope For Future Research

Future research can expand the study across multiple cities and regions to capture variations in consumer preferences and startup strategies. Comparative studies between Indian and international perfume startups could provide cross-cultural insights into sustainability and innovation practices. Additionally, the integration of **AI, virtual reality, and sensory marketing** in perfume promotion could be explored to understand their impact on emotional branding and consumer experience. Longitudinal studies could also help in tracking the evolution of consumer behavior, brand loyalty, and business adaptability over time.

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