

# A Study on Entrepreneurship based on MBTI Personality Types for the Technology and Cosmetic Industries Driven by AI

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## Abstract

This study investigates the relationship between Myers-Briggs Type Indicator (MBTI) personality types and entrepreneurial success in the technology and cosmetics industries, focusing on gender distribution patterns. Using a dataset of over 8,600 entries, we developed an Artificial Intelligence (AI)-based model that combines Natural Language Processing (NLP) and Machine Learning (ML) to analyse personality traits. The model achieved 86.17% accuracy in classifying Intuition/Sensing traits and 79.65% in classifying Thinking/Feeling traits. Results indicate that tech entrepreneurs predominantly display NT (Intuitive-Thinking) traits, while cosmetic entrepreneurs typically show SF (Sensing-Feeling) traits. These findings suggest a correlation between personality type and industry choice, with implications for entrepreneurial education and support systems. The study also examines how cultural contexts and emerging markets influence the manifestation of different personality types in entrepreneurial settings.

**Keywords**— Artificial Intelligence (AI), Cosmetic Industry, Entrepreneurship, Gender Distribution, MBTI (Myers-Briggs Type Indicator), Technology Industry

## I. INTRODUCTION

The MBTI assessment is a personality test designed to assist individuals in identifying and understanding their personality preferences and how these preferences influence their behaviour, communication, and interactions with others, as seen in normal, healthy behaviour [1] [2]. According to Carl Jung's psychological type theory, it outlines your personality preferences in four dichotomies: Extraversion-Introversion, Sensing-Intuition, Thinking-Feeling, and Judging-Perceiving [1] [2]. Understanding these personality preferences becomes particularly relevant in the context of entrepreneurship, where individual characteristics significantly influence business outcomes. Entrepreneurship, defined as the ability to establish and run a business venture while navigating inherent uncertainties and risks, requires individuals to identify market opportunities, develop innovative solutions, and mobilise resources effectively [1] [3]. These entrepreneurs must possess not only technical skills and market knowledge but also personality traits that align with their chosen industry's demands.

This research focuses on two distinct sectors: technology and cosmetics entrepreneurship. The technology sector, characterized by rapid innovation and technical complexity, demands entrepreneurs who can navigate complex technical challenges while maintaining a strategic vision. In contrast, the cosmetics industry, centred on personal care and beauty products, requires entrepreneurs to balance product innovation with in-depth consumer understanding and emotional connection. Both fields demand resilience and innovative thinking, yet they attract entrepreneurs with different personality profiles and gender distributions [4]. A notable observation in these industries is their distinct gender distribution patterns. The technology sector exhibits a predominantly male presence in founding roles, whereas the cosmetics industry features a higher proportion of female entrepreneurs in leadership positions. This gender disparity raises important questions about the relationship between personality types, gender, and entrepreneurial success in different sectors.

This study aims to investigate these relationships through an innovative AI-driven approach, analysing how MBTI personality types correlate with

entrepreneurial success across gender lines and industry sectors. By examining these correlations, we seek to better understand how individual differences influence entrepreneurial outcomes and potentially inform more effective support systems for aspiring entrepreneurs across all demographics.

**II. MOTIVATION AND OBJECTIVES**

An observation was made regarding the entrepreneurship industry, particularly in technology and cosmetics. The tech industry is male-dominated. This observation is supported by studies showing that over 85% of successful tech-related startups are founded by men [4] [5]. On the other hand, the cosmetics industry is predominantly female, as they embody key roles as founders and leaders. Research shows that female-founded startups in sectors such as cosmetics tend to have a higher proportion of female employees compared to male-founded ventures [3].

Personality traits also play a role in these gendered industries. Traits traditionally associated with male entrepreneurs—such as assertiveness and risk-taking—are often seen as advantageous in tech, while traits of empathy and nurturing are more valued in cosmetics [2] [6].

The primary objective of this research is to identify and analyse the personality traits and types exhibited by entrepreneurs, both male and female. This study aims

to explore how these personality characteristics contribute to their professional success and whether the nature of their work shapes these traits. By examining the interplay between personality and entrepreneurship, the goal is to draw meaningful conclusions about how individual differences influence entrepreneurial behaviour and outcomes across genders. Furthermore, this research seeks to improve comprehension of the entrepreneurial landscape and inform strategies for fostering effective entrepreneurial practices by encouraging an AI-driven approach.

**III. METHODOLOGY**

This research adopts a quantitative approach to explore the relationship between personality traits, as categorized by the MBTI framework, and entrepreneurial success across different domains.

*A. Understanding the Domain of Entrepreneurship*

Entrepreneurship is increasingly viewed through multiple disciplinary lenses, each domain offering unique insights into entrepreneurial behaviour (see Fig. 1). For example, psychological factors play a significant role in decision-making processes among entrepreneurs, while sociocultural contexts can influence the types of ventures that emerge in different regions. Certain factors, such as market potential, were taken into consideration to identify the industry sector that must be focused on.

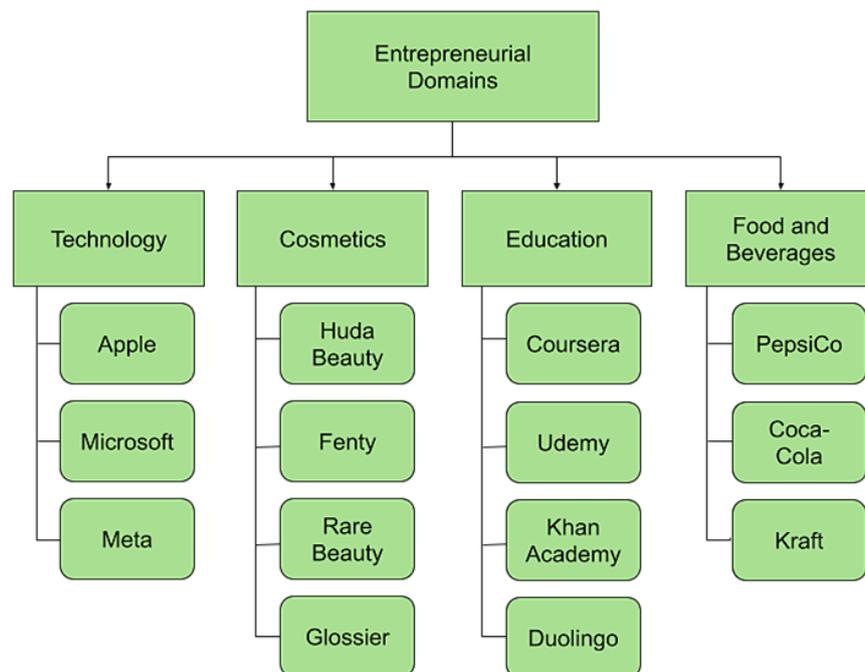


Fig. 1 Categorization of Entrepreneurial Domains



Both industries, technology and cosmetics, are at the forefront of innovation and growth, with constant advancements. Technology poses major opportunities to develop and improve AI-related technology, as well as to use e-commerce to revolutionise consumer experiences. These opportunities allow a multifaceted approach to improving the quality and efficiency of a business venture [7]. Similarly, the cosmetic industry excels in personalising a product or brand, tailoring it to individual tastes, needs, and preferences. This attribute ranges from innovative solutions such as virtual try-ons using augmented reality (AR) to brands offering shades of makeup catering to all complexions [7] [8]. After identifying the industry sectors, entrepreneurs whose personalities could be studied in those sectors were narrowed down. Here, the observation of gender disparity was much more obvious, with all prominent figures in each industry belonging to the same gender.

*B. Identification of MBTI Types*

The MBTI personality type is made up of four dichotomies (see Table I). The dichotomies represent, in the same order, the allocation of cognitive resources, information processing, decision-making, and method

of engagement regarding the external environment. Every possible arrangement of preferences in the four dichotomies mentioned above results in 16 unique combinations, or personality types [9]. These combinations indicate which of the two poles in each dichotomy is predominant in an individual, leading to the classification of 16 distinct personality types. Over the past few decades, the MBTI assessment has been integrated into various fields to identify and enhance interpersonal relations between members of a group/organisation [10].

The first dichotomy– Extraversion-Introversion– is a majorly genetic factor. Genetics accounts for approximately 40-60% of the variance in this dichotomy [11]. It influences how a person dedicates their mental efforts, e.g., attention and memory, across various stimuli. The second and third dichotomies– Sensing-Intuition and Thinking-Feeling– are factors that, in this case, have been directly correlated to the nature of an entrepreneur’s work and their motivation to navigate their business and decisions. The fourth dichotomy– Judging-Perceiving– is a social factor, as interacting with the external environment can shape how individuals develop and express their characteristics.

Table I  
Overview Of MBTI Dichotomies: Letters And Descriptions Of Cognitive Preferences

Dichotomy	MBTI Letter	Description
Allocation of Cognitive Resources	I (Introversion)	Prefer to focus on the inner world of thoughts and feelings. Introverts are energized by solitary activities and often need time alone to recharge.
	E (Extraversion)	Prefer to focus on the outer world of people and activities. Extraverts are energized by social interactions and often enjoy being around others.
Information Processing	S (Sensing)	Prefer to take in information through concrete, tangible details and experiences. Sensing individuals focus on the present and what is real and practical.
	N (Intuition)	Prefer to look at the big picture and consider possibilities. Intuitive persons focus on patterns, meanings, and future potential rather than just immediate facts.
Decision-Making	T (Thinking)	Prefer to make decisions based on logic and objective criteria. Thinkers value truth and fairness, often prioritizing rational analysis.
	F (Feeling)	Prefer to make decisions based on personal values and how choices affect others. Feelers prioritise empathy and harmony in their interactions.
Method of Engagement regarding the External Environment	J (Judging)	Prefer structure, order, and planning. Judgers like to have things settled and organized, often enjoying schedules and lists.
	P (Perceiving)	Prefer flexibility and spontaneity. Perceivers like to keep their options open and adapt as new information arises, often enjoying a more laid-back approach.

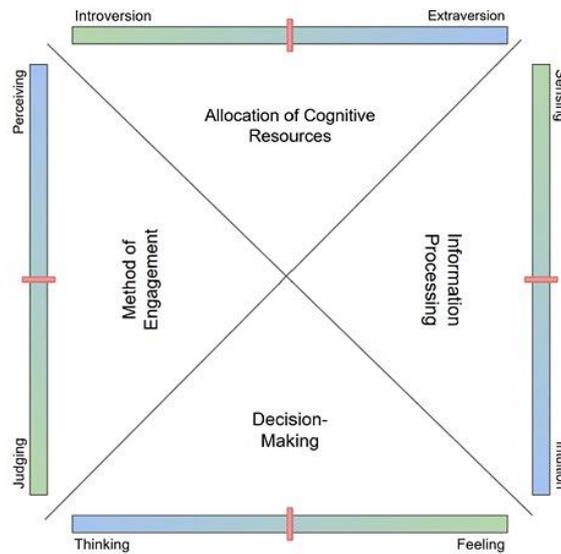


Fig. 2 MBTI Dichotomy - Cognitive Preference and Style

TABLE II

Comparison Of Cognitive Preferences Between Tech And Cosmetic Entrepreneurs Based On Dichotomous Traits

Dichotomy	Tech Entrepreneurs	Cosmetic Entrepreneurs
Intuition vs. Sensing	Favours 'Intuition'	Favours 'Sensing'
	Focused on future possibilities	Focused on tangible experiences
	Abstract concepts	Sensory aspects of products
Thinking vs. Feeling	Predominantly 'Thinking'	Predominantly 'Feeling'
	Logical problem-solving	Empathetic
	Analytical approach	Customer-focused approach

The multi-faceted way to assess and represent an individual's cognitive preferences and style is illustrated (see Fig. 2). Each MBTI dichotomy is represented by a slider, suggesting that an individual's preference or tendency can fall anywhere along a spectrum between the two extremes.

In the technological sector, the figures chosen are as follows, along with their MBTI types:

- Steve Jobs, co-founder of Apple: ENTJ [12].
- Bill Gates, co-founder of Microsoft: INTP [13].
- Elon Musk, founder of SpaceX and co-founder of Tesla: INTJ [14].

In the cosmetic sector, the figures chosen are as follows:

- Selena Gomez, founder of Rare Beauty: ISFJ [15].

- Rihanna, founder of Fenty Beauty: ESFP [16].

Tech entrepreneurs predominantly display NT (Intuitive-Thinking) traits, while cosmetic entrepreneurs typically show SF (Sensing-Feeling) traits. This suggests a correlation between personality type and industry choice (see Table II).

#### A. Conceptual Framework

The framework of this study posits that MBTI-AI integration, consisting of components and characteristics, reports outcomes where relationships between Industry & Gender Dynamics and Output Variables are observed (see Fig. 3). These relationships are further modulated by mediating/moderating variables, including context variables and considerations of power and politics.

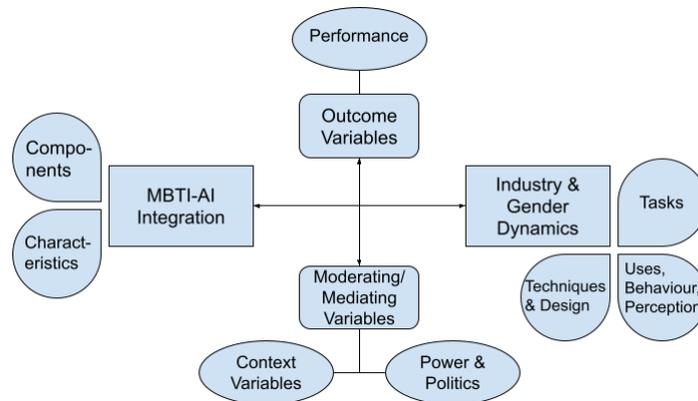


Fig. 3 MBTI – AI Integration framework

- **MBTI-AI Integration (Components and Characteristics):** The core of the study lies in classifying MBTI personality traits utilising sophisticated ML models and NLP techniques. Specific NLP methodologies include TF-IDF vectorisation, Word2Vec embeddings, sentiment analysis, and custom lexical indicators. The ML component employs Random Forest classifiers, optimized through grid search.
- **Industry & Gender Dynamics (Tasks, Techniques & Design, Uses, Behaviour and Perception):** The research identifies gender distribution patterns within the technology and cosmetics sectors, and maps the prevalence of NT (Intuitive-Thinking) traits among tech entrepreneurs and SF (Sensing-Feeling) traits among cosmetic entrepreneurs. The investigation also considers gender disparity as one of the key tasks. Furthermore, it examines the role of Technology & Design in AI-related technologies, specifically how these factors influence behaviour, use, and perception through personalisation, inclusivity, and innovative solutions such as virtual try-ons using augmented reality (AR).
- **Output Variables:** The study analyses how personality traits, mediated by gender dynamics and industry-specific factors, correlate with entrepreneurial performance. These output variables have been measured through quantifiable metrics, including funding raised, market share, customer acquisition rates, revenue growth, and innovation indices. Both the technology and cosmetics sectors, noted for their innovation and

growth with constant advancements, are central to the analysis.

- **Mediating/Moderating Variables (Context Variables, Power & Politics):** The conceptual framework incorporates mediating/moderating variables, including cultural contexts, emerging markets, and ethical considerations, such as gender bias in AI algorithms and data privacy. The text discusses the influence of sociocultural contexts and gender dynamics in tech and cosmetic ventures. The text also considers the power and politics in the way that the model is created and considers ethics to be of utmost importance. Stakeholder perspectives would also be considered.

#### B. AI-based Models Available

- 1) **NLP algorithms:** Analysing written content (e.g., social media posts, business plans) to infer personality traits, Sentiment analysis to gauge emotional tendencies and decision-making patterns, etc.
- 2) **Machine Learning Classification Models:** Supervised learning algorithms (e.g., Random Forests, Support Vector Machines) trained on datasets containing MBTI assessments, performance metrics, entrepreneurial success indicators (e.g., funding raised, customer acquisition rates), etc.
- 3) **Deep Learning Neural Networks:** Convolutional Neural Networks (CNNs) for visual analysis of entrepreneurs' facial expressions and body language, Recurrent Neural Networks (RNNs) to analyse business decisions over time, etc.

4) *Ensemble Methods*: Combining multiple AI models to improve prediction accuracy and robustness.

### C. Proposal of an AI-Based Model

*Data Collection and Preprocessing*: This research utilises a dataset sourced from Kaggle [17]. The dataset, comprising over 8,600 entries, includes two primary components. The first component is the personality type, which is the individual's MBTI code (e.g., INTP, ESFJ, etc.). The second component is textual data, containing the individual's last 50 written posts, separated by a delimiter. The primary goal of this dataset is to investigate whether discernible patterns can be identified in the textual outputs of individuals with specific MBTI personality types. The structured nature of the dataset allows for a systematic analysis of these patterns, enabling the integration of quantitative methods to investigate the relationship between personality traits and individual differences in communication styles. Preprocessing techniques were then employed to remove noise and make the dataset easier to process. Techniques used are:

- Text normalisation, e.g., lowercasing, removal of MBTI personality type mentions, stopwords, URLs, extra spaces, alphanumeric symbols
- Tokenisation using NLTK's word tokenizer,
- Lemmatisation to reduce inflectional forms, improving feature consistency.

*Feature Engineering*: To capture syntactic and semantic features, multiple feature engineering techniques were utilized, such as TF-IDF vectorisation, Word2Vec embeddings, and custom lexical indicators to group domain-specific lexicons for logic/emotion-related vocabulary. Sentiment analysis was also integrated to enhance the model's feature set.

*Model Architecture and Training*: The model was designed to classify MBTI personality traits from textual data, focusing specifically on two dichotomies: N/S (Intuition vs. Sensing) and T/F (Thinking vs. Feeling). The pipeline for each dichotomy involved feature scaling using StandardScaler. The classification model was chosen as the Random Forest Classifiers. This model was selected due to its robustness to high-dimensional, sparse data and interpretability via feature importance. Hyperparameter tuning was conducted to improve classifier performance. For the N/S dichotomy, the optimal parameters included a max\_depth of 15, 2

min\_samples\_split, and 100 n\_estimators. For the T/F dichotomy, the best results were achieved with a max\_depth of 20, 10 min\_samples\_split, and 300 n\_estimators. These values were identified via grid search optimisation, enabling the model to achieve robust classification accuracy.

*Evaluation Metrics*: Accuracy, precision, recall, and F1-score were implemented to evaluate the model's efficacy. For the N/S dichotomy, the model achieved an overall accuracy of 86.17%, demonstrating its ability to distinguish between Intuition (N) and Sensing (S) traits. The T/F dichotomy yielded a slightly lower accuracy of 79.65% but displayed a more balanced performance across precision, recall, and F1 scores.

- In the N/S dimension, the model accurately captured Sensing (S) traits with an F1-score of 0.93, though Intuition (N) traits were less distinctly observed.
- For the T/F dimension, both Thinking (T) and Feeling (F) traits were detected effectively, with F1-scores of 0.82 and 0.77, respectively.

*Results across Dichotomies*: The analysis revealed key insights into the model's performance for each dichotomy. The T/F dichotomy exhibited the clearest results, as this trait is closely tied to measurable linguistic patterns such as sentiment polarity and word choice. Incorporating sentiment analysis and lexical indicators contributed significantly to the model's success in differentiating between Thinking (T) and Feeling (F) traits, resulting in balanced precision and recall values. In contrast, the N/S dichotomy proved to be a more abstract and partially observable factor for the model. While the model demonstrated strong accuracy overall, the distinction between Intuition (N) and Sensing (S) was less pronounced. This outcome highlights the challenge of capturing traits tied to abstract thinking and nuanced language patterns, which are less directly observable in textual data.

*Challenges and Observations*: One of the primary observations during model evaluation was the varying degrees of observability across the dichotomies. The T/F dimension benefits from linguistic markers such as emotional language and direct expressions of logic, making it more suitable for text-based classification. Conversely, the N/S dimension involves abstract concepts such as imagination and conceptual thinking, which are less explicitly conveyed in written text. Despite these challenges, the model successfully

achieved high accuracy for the Sensing (S) trait, reflecting its ability to generalise well for more observable aspects of this dichotomy.

*Proposed Strategies for Performance Improvement:* To further enhance the model's performance, future iterations could explore incorporating deep learning approaches such as transformer-based architecture (e.g., BERT or GPT), which excel in contextual text comprehension. Additionally, integrating advanced linguistic features, such as metaphor detection or topic modelling, could improve the model's ability to capture abstract traits associated with the N/S dichotomy. Expanding the feature set to include pragmatic and discourse-level indicators might also provide deeper insights into subtle personality cues.

#### D. Justification of Methodologies Used

The study uses strong, quantitative methods to examine how personality affects entrepreneurial behaviour across genders and industries. It uses stratified sampling and validated tools like the MBTI to ensure the results are reliable and reproducible. Stratified sampling helps include nuances within the industry groups, making the study more relevant and practical. Meanwhile, the MBTI has limitations because it sorts people into only two dichotomies for each trait, but it still helps achieve trustworthy personality results. The study also notes the potential response bias in self-reported data. Emphasising that the responses are confidential could assist this challenge; however, using interviews or other methods can improve the quality of the data. Furthermore, using an AI-driven approach helps better understand how personality, gender, and industry connect in entrepreneurship, and aims to give actionable insights for academics, policymakers, and businesses. The goal is to help create more targeted interventions and a more inclusive and effective entrepreneurial environment, while also improving research methods in the future to improve the quality of the results achieved.

## IV. DISCUSSION

### A. Industry-Specific Personality Traits and Challenges

Technology entrepreneurs often exhibit charisma, innovation, risk-taking, and pragmatism. These characteristics support their logical and level-headed approach as they create products that address technical challenges such as memory management, network

connectivity, and security. Charisma helps them inspire teams and attract investors, while an innovative mindset drives the exploration of new solutions. Pragmatism allows them to focus on practical applications and efficient execution, ensuring that ideas translate into viable products. Entrepreneurs often face challenges in the industry that require specific traits to resolve. Challenges faced by tech entrepreneurs mentioned are such as but not limited to:

- **Rapid Technological Change:** Due to the industry's dynamic and fast-moving nature, constant learning and adaptation are essential. Successful tech entrepreneurs imbibe traits such as a strong drive for continuous learning and skill development [18].
- **Scalability:** Tech products often require immediate scaling to meet market demands. Entrepreneurs in this field must be able to think strategically and tactically to manage rapid changes [18].
- **Competitive Landscape:** Entrepreneurs must understand market positioning and differentiation to succeed in the highly competitive technology sector [18].

Cosmetic entrepreneurs imbibe empathy, creativity, risk-taking, and adaptability. Empathy enables them to connect deeply with customers, understanding their desires for beauty products that enhance self-expression. Creativity is also crucial, as it helps them develop unique formulations and captivating aesthetics that resonate with diverse audiences [19].

Some challenges faced by cosmetic entrepreneurs include:

- **Product Development:** producing new cosmetic formulations requires a balance of scientific knowledge and creativity, which is why successful entrepreneurs are often found to work closely with dermatologists and chemists [19].
- **Brand Identity:** owing to market saturation and cutthroat competition, a unique brand identity is crucial to building recognition, fostering customer loyalty, and ensuring long-term success. Strong marketing skills and a clear vision are assets to accomplish this [19].
- **Inclusivity:** due to an increased demand for inclusivity in diversity, paying attention to

customer needs and changes in ideas of representation is of utmost importance [19].

Both technology and makeup entrepreneurs leverage their distinct personality traits to succeed in their respective fields. While tech entrepreneurs focus on logical problem-solving and technical execution, makeup entrepreneurs prioritise emotional connections and creative expression. This supports the notion that a direct correlation exists between their MBTI personality types and the nature of their work.

### B. MBTI Type Influence on Business Strategies

1) *NT (Intuitive-Thinking) Personalities in Technology*: NT personalities in the tech sector often keep in mind certain concepts when forming business pathways and strategies:

- **Innovation Focus**: NT types tend to work on the ideation and execution of groundbreaking technologies, perhaps at the expense of not being able to fulfil current market demands. For example, investing in AI cutting-edge technology with the possibility that it is not at commercialized standards [20].
- **Analytical Approaches**: NT types excel at strategic planning and using data-driven decision-making to carry out extensive market analysis, as well as predictive modelling before product launches [20].
- **Risk Tolerance**: such NT-type individuals often show a higher risk tolerance when faced with calculated risks [20].

2) *SF (Sensing-Feeling) Personalities in Cosmetics*: Figures in the cosmetic sector typically embody SF personalities, driven by empathy, sociability, and practicality. Being an SF type typically impacts business strategies in ways such as:

- **Trend Responsiveness**: Adapting to market trends is of utmost importance to remain competitive in a rapidly evolving beauty industry [19].
- **Customer-Centric Approach**: Prioritising understanding and fulfilling customer needs to provide customers with a personalized experience [19].
- **Practical Solutions**: Products created by beauty brands often solve tangible, everyday beauty problems faced by customers. This improves product efficacy and heightens product differentiation (provides pricing power).

### C. Intersection of Technology and Cosmetics

As we look at entrepreneurs in tech and cosmetic industries individually, the current age of digitalization makes it vital to address the intersection of tech and cosmetic entrepreneurship. A combination of innovation, consumer experience and personalization are allowing tech-savvy entrepreneurs to make their mark in the industry as they bring data-driven insights with creative expression. This intersection may be particularly suited to entrepreneurs with balanced NT (Intuitive Thinking) and SF (Sensing Feeling) traits, combining the analytical approach of tech with the customer-focused empathy of cosmetics.

1) *Tech-Driven Beauty Innovation*: Tech-driven beauty brands are now expanding into AI-powered skincare [7]. Brands such as “Proven Skincare” use AI to analyze thousands of ingredients and customer data points to create personalized skincare formulations. These AI algorithms assess a user’s skin conditions via smartphone images and tailor product recommendations accordingly. This approach aligns well with the NT personality types common in tech entrepreneurship, leveraging their focus on innovation and abstract concepts to solve concrete beauty problems. Some brands, such as ModiFace and Perfect Corp, are offering Augmented Reality (AR) makeup try-ons [7]. Allowing customers to virtually test products before making a purchase is a technique adopted by major brands and makeup retailers to enhance the online shopping experience. This fusion of technology and beauty caters to both the intuitive future-focused thinking of NT types and the sensory, customer-centric approach of SF types, creating a bridge between tech and cosmetic entrepreneurship [7].

2) *Leadership & Team Dynamics*: This bridge between tech and cosmetic entrepreneurship also gives way to thinking about how different MBTI type personalities may influence leadership styles and team dynamics in startups. A combination of NT and SF types may have the power to significantly impact how successfully teams are led, and decisions are made [21]. Having qualities of authoritative, vision-driven leadership can help the brand focus on long-term goals while adopting a collaborative, empathetic approach allows the brand to deal with short-term goals and problems without compromising future objectives [21] [22].

This brings a balance between project management and conflict resolution. Having Judging and Perceiving type combinations might bring a complementary effect in planning and adaptability, while a mix of introverted and extroverted individuals helps strike a balance between strong external and internal company relations [23]. Such a balance of MBTI types in leadership has the potential to create an eternally robust foundation for start-up success, combining innovation with empathy and long-term vision with practical execution [24] [25]. However, it's important to recognise that entrepreneurship is a global phenomenon, and the interplay of personality types may manifest differently across various cultural contexts [26].

#### D. Cultural and Global Perspectives

As we expand our perspective beyond Western entrepreneurial ecosystems, we must consider how cultural factors play a significant role in forming business strategies and motives across different regions [26]. Examining factors, such as relationship-oriented cultures and emerging markets, provides a look into how certain MBTI types of personalities manifest in diverse entrepreneurial settings.

- 1) *Relationship-Oriented Cultures*: Often found in Latin America and the Middle East, relationship-oriented cultures value personal connections and emotional bonds in business settings. This cultural emphasis can influence the occurrence of certain MBTI types and business strategies in both the tech and cosmetic industries [25] [26]. For example, there are higher occurrences of individuals with a Feeling type personality in successful entrepreneurs, as they tend to factor in personal values when making decisions [26]. This also aligns well with the cultural expectation of maintaining strong interpersonal relations in business. Furthermore, noting that networking and relationship-building are essential to long-term success in any industry, face-to-face meetings and personal introductions might be preferable over impersonal communication methods. Leaders may also adopt a more collaborative and team-oriented approach when solving problems.
- 2) *Emerging Markets*: South and Southeast Asia comprise complex entrepreneurial environments with characteristics that may favour certain MBTI

types [26]. For example, a rapidly changing environment favours Perceiving types due to their adaptability and openness to new information [27]. Infrastructural gaps are also imminent and can be easily tackled by the resourcefulness of a perceiving individual [28]. Similarly, a combination of Thinking and Feeling types also emerges due to the diverse conditions present [21] [28]. Thinking types have an analytical approach, as mentioned above, and are efficient when navigating regulatory changes and fast-changing markets [21]. South and Southeast Asia are regions that value personal connections as well. Feeling types give way to relationship-based approaches that are important when building those connections [28]. Having traits of empathy and market understanding also encourages the success of Feeling-type entrepreneurs. The presence of innovative concepts in the Indian subcontinent, e.g., *jugaad* (translated as "frugal innovation," an Indian colloquial term encapsulating the innovative and resourceful spirit of finding creative solutions using limited resources), also acts as evidence in showing how Perceiving and Thinking type individuals thrive in such regions [27].

#### E. Future Implications and AI Integration

The intersection of AI, neuroscience, and personality assessments is an emerging field that could significantly impact how we understand and apply personality insights in business contexts [29] [30].

- 1) *Advanced Personality Assessment Methods*: Advanced personality assessment methods and techniques can be utilized to enhance the process using AI and neuroscience, such as:
  - AI-powered analysis: Large volumes of data from multiple sources, e.g., social media, work performance, and communication patterns, can be processed by ML algorithms to provide more thorough personality profiles [31].
  - Neuroimaging insights: Advanced brain imaging techniques (fMRI, EEG) are being used to correlate brain activity patterns with personality traits, potentially offering more objective measures [31].

Continuous assessment: AI could enable real-time personality analysis, tracking changes over time and in

different contexts, providing a more dynamic view of an individual's traits [30].

- Predictive modelling: AI models could predict how certain personality types might perform in specific roles or situations, aiding in team composition and leadership development [29].

2) *Evolution of Personality Models*: The MBTI test has several strengths, including its widespread familiarity and acceptance in business contexts, along with the common ground it provides for discussing personality differences and its portrayal of team dynamics and communication. However, the MBTI also faces challenges, such as criticism for its lack of scientific rigour and binary categorizations, its potential inability to capture the full complexity of human personality, and its failure to account for cultural differences or situational factors [32]. Thus, a new model is emerging in the realm of the Big Five (OCEAN), referring to the widely drawn multivariate model of human personality, which is gaining some prominence because it is considered to have a bigger corpus of evidence. Some new adaptive models are time-sensitive, while other neuroscience models are based on actual brain activity regarding behaviour and decision-making [31]. These new approaches aim to address the limitations of traditional personality assessments while providing more comprehensive and scientifically robust insights into human behaviour and potential.

## V. CONCLUSIONS

This research demonstrates the distinct patterns exhibited by certain personality types across entrepreneurial domains, with technology entrepreneurs exhibiting NT (Intuitive-Thinking) traits, and cosmetics entrepreneurs displaying SF (Sensing-Feeling) characteristics. This emphasizes the impact of personality on industry-specific entrepreneurial approaches. The AI-based model developed shows high accuracy in detecting personality traits, highlighting the promise of automated, AI-driven personality assessments in entrepreneurship research. The study contributes to the literature by empirically linking personality types to entrepreneurial success, validating the role of AI in personality analysis, emphasising the importance of cultural context, and revealing gender distribution patterns. Practically,

these findings can inform entrepreneurial education, business incubator strategies, career guidance, and team building by leveraging personality insights. Although limitations such as a limited sample size exist, the opportunity to improve AI models becomes increasingly promising. This comprises sophisticated AI applications, cross-cultural and longitudinal studies, and industry expansion. Conclusively, our research establishes the foundation for merging AI and personality psychology with entrepreneurship, providing valuable insights for academics and practitioners, as technological and industrial environments evolve at an unprecedented rate.

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