

CONSUMER BEHAVIOR AND DIGITAL MARKETING ENVIRONMENT OF AN
AYURVEDIC FUNCTIONAL FOODS STARTUP: A CASE STUDY ON PLANRBRO
LIFE SCIENCES

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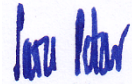
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Dedication

I dedicate this work to my parents, Dr Atul Sharma & Dr Anita Sharma, my wife, Mrs. Khushboo Sharma and all others who have supported me throughout my doctorate journey. Lastly, I would love to thank God for giving me this opportunity to pursue this endeavor.

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This work would not have been possible without the constant support of my supervisor and mentor, prof. Dr Meskina Olesya, she continuously helped me in shaping the research like a precisely done marble art. I would also love to thank all the volunteers and friends who worked with me during our surveys and public opinion sessions without them, any of this wouldn't be possible. Thanks, it means a lot to me!!!!

ABSTRACT

CONSUMER BEHAVIOR AND DIGITAL MARKETING ENVIRONMENT OF AN AYURVEDIC FUNCTIONAL FOODS STARTUP: A CASE STUDY ON PLANRBRO LIFE SCIENCES

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2024

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Digital marketing is a silver bullet for e-commerce-based businesses; it continuously helps both consumers and brands to understand each other's requirements at minimal costs. In this study, we present a roadmap for start-ups in the nutraceutical domain to master their social media campaigns by closely interacting with their consumers digitally. We present a case study of PlantBro Life Sciences Private Limited, India, to get insights into the social media and E-commerce strategies on platforms like Facebook, Instagram, YouTube, Amazon and Flipkart. Next, We surveyed a housing society with 150 participants selected based on age, availability and convenience to understand the current and future scenario of Fungi-based nutraceuticals in the Indian market. Lastly, we Interviewed the Chief Executive Officers (CEOs) of four major nutraceutical brands to elucidate the efficiency of social media and e-commerce strategies on the ground level. While comparing the digital marketing strategies of PlantBro Life Sciences on both Instagram and Facebook, we recorded organic farm videos and product benefit videos posted by the founder to be the most successful ones for gaining followers and sales. Facebook did not prove to be as

successful as Instagram in terms of sales because of multiple factors, such as the audience's interests and the declining trend of the platform. The Conversion rate recorded on Instagram was 20%, while on Facebook, it was recorded to be 10%. As per the qualitative comparison of different strategies on Facebook & Instagram, influencer videos and videos featuring Bollywood stars worked the best for heavily funded brands. Brand-specific posts like organic farm videos and client testimonies worked effectively for brands with little or no external funding, like PlantBro Life Sciences. Product positioning and competitor targeting worked well for PlantBro Life Sciences, and first-page banners and video ads aced the list for brands with funding on e-commerce platforms like Amazon and Flipkart. The survey suggested people from the age group 15-30 years to be highly interested in nutraceuticals and had maximum relative insight into fungal supplements, whilst age groups 60 and above showed little interest towards them. The CEOs clearly stated that the digital marketing scenario is capital-driven and to make a mark in short time required gigantic capital for influencing the audiences.

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CHAPTER I: INTRODUCTION

Digital marketing has proven to be a silver bullet for entrepreneurs. It offers pathways like social media, email, artificial intelligence, and affiliate marketing to connect brands with their audience.. Company owners today seek a digital marketing strategy (DMS) to express their brand aspirations to the targeted audience and to enhance their product acceptability (Olson et al., 2021). E-commerce trends worldwide have seen a sharp increase due to both the COVID-19 pandemic and changing consumer behaviour towards shopping. The current era is technology-driven, and the consumer expects shopping to be just a click away. The subversion of traditional sales by E-commerce has largely been affected by the disruption of supply chains and operations of e-commerce platforms during the pandemic due to lockdowns and social distancing norms worldwide (Silva, 2021).

Plants and fungi date back to primaeval times for their use in traditional medicine. Different continents of the world have their share of traditional medicine, for example, Ayurveda, Egyptian papyrus, Chinese traditional medicine, and American and African native medicine systems (Gunjan et al., 2015). The prevalence of traditional medicinal practices in India has encouraged multifarious brands to develop novel formulations using plant and medicinal herbs and mushroom extracts for the treatment and prevention of a respective ailment (Gunjan et al., 2015). However, the official regulations imposed on nutraceutical

and dietary products by the Food Safety and Standards Authority of India have become stringent recently.

PlantBro Life Sciences Private Limited, 2021, India, is a startup working on interdisciplinary lines of Ayurvedic nano-formulation design, mycology and organic agriculture. PlantBro Life Sciences grows its raw materials, i.e., medicinal herbs, using ancient farming practices called Vedic agriculture. Further, it cultivates a medicinal mushroom called *Cordyceps Militaris* in its state-of-the-art laboratory in vitro. Finally, it processes and formulates nutraceuticals to work on defined ailments and abilities. It specifically focuses on nanotechnology-based techniques to prepare formulations. In this research, we intend to conceptualize different strategies followed by PlantBro Life Sciences in terms of marketing, branding, brand building, and operations. Further, we will study the response of Indian consumers towards novel fungi and nanotechnology-based functional foods. Lastly, a comparison of traditional business models and current digitally sound models will be presented for the nutraceutical market of India.

1.1 Research Problem

The Ayurvedic functional food market in India is vast, like the existing gap between products and consumers. Thus, the market has experienced significant transformation in both product lines and marketing strategies. A variety of innovative nano-nutraceuticals, functional foods, and beverages are now prominent on e-commerce platforms. However,

consumer unawareness and misinformation remain significant obstacles to successful market expansion.

Therefore, brands nowadays prioritize transparency and provenance of product ingredients, certifications and regulatory assurances digitally via creating a digital environment. Moreover, a concrete relationship between the digital environment and the market expansion of nutraceutical products needs to be established in terms of revenue generation. Conclusively, we hypothesize that the recent evolution of the digital environment in the post-pandemic phase has boomed the nutraceutical industry in India. The consumer lacks significant insight into product specifications and details. Thus, it is critical to generate awareness, and what could be a better tool than the digital environment in the present era, even for writing an article, we use an online support system to generate a draft from existing information. The digital environment is an immense help to both educate and inform consumers about new-age nutraceuticals and upcoming technologies. The research identifies several key problems that need to be addressed:

1. What are the different marketing strategies followed by the new-age Indian nutraceutical brand PlantBro Life Sciences Private Limited?
2. What is the response of the targeted consumer towards novel technology in functional foods?
3. What is the consumer behaviour towards brand transparency?
4. What is the response of consumers towards nano-nutraceuticals?

1.2 Purpose of Research

The motivation here is to frame a set of strategies followed by a startup emerging in the post-pandemic phase, circling its digital marketing, content development, operations, distribution networking, brand building and branding. Alongside this, the study will provide insight into consumer behaviour and response towards nanotechnological functional foods in India. Conclusively, we hypothesize that the recent evolution of digital marketing, branding, brand building, product & content development, logistics and operation planning strategies have boomed the nutraceutical industry in India. Moreover, a concrete relationship between the digital environment and the market expansion of nutraceutical products needs to be established in terms of revenue generation. The study will primarily shine light on the following areas.

1. Comparative analysis of Digital marketing strategies opted by a start-up, PlantBro Life Sciences, India.
2. Changes in digital marketing trends in the post-pandemic phase and how it has boomed the nutraceutical industry in India.
3. The scope of Fungi-based nutraceuticals brands in the Indian market.
4. Scope of nanotechnology-based Ayurvedic nutraceuticals for GenX in India.

1.3 Significance of the Study

This study will primarily focus on different digital marketing strategies followed by new-age nutraceutical start-ups in India, with special attention to PlantBro Life Sciences Private

Limited. We are also going to investigate the effects of the pandemic on consumer behaviour and how it has affected the overall e-commerce trends in India. Furthermore, we will examine the acceptance of fungi-based nutraceuticals into the Indian market and their rate of penetration, to research these parameters, we will conduct real-time contemporary conversations with Generation Z (born between 1997-2012) and X (born between 1965-1980) who are considered the primary targeted audiences for such products.

Lastly, we aspire to record the scope of nanotechnologically manufactured nutraceutical products in the Indian market.

1.4 Research Questions

The Nutraceutical Industry in India has been booming sharply, like the start-up ecosystem. Companies in India have their way of carrying out operations because, unlike the West and other parts of the world, we have ample manual labour. Thus, it is important to understand the dynamics of an Indian start-up at different levels and situations, as entrepreneurship is extremely dynamic. In this research, we aim to showcase different strategies followed by PlantBro Life Sciences, a nano-nutraceutical company, from its raw material to complex social media algorithms.

1. Comparative analysis of Digital marketing strategies opted by a start-up, PlantBro Life Sciences, India.
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CHAPTER II: REVIEW OF LITERATURE

2.1 Digitization of Information Exchange

The use of technology for the conversion of analogue information to digital data, for example, the simple transfer of a hard copy document to a phone, can be referred to as digitisation of information exchange. It can be variably addressed for a company as it benefits both its operations and marketing strategy. In our case, we will only be gathering insight into the marketing strategy. According to Jacobson (2022), there are several ways in which marketing strategies have benefited from the digitisation of information exchange.



Figure 1. Transformation in marketing strategies due to digitization (Balegar, D. and Thakkar, A., 2022)

Search Engine Marketing (SEM): Concerning enterprises and consumers, internet search has significantly complemented business efficiency. Search Engine Marketing, or SEM, is one of the most popular and efficient strategies today for boosting a brand's reach to its

target audience. SEM allows customized keyword search, which results in webpages and websites of desired companies on search engines like Google (Kotler, Cao, Wang and Qiao, 2020). Different companies opt for different strategies like organic and paid results to appear as a top result. In organic results, there is no external intervention, and results are natural for a search engine. In sponsored results, the search engine charges the enterprise on a per-click basis on the sponsored ad. To use the sponsored ad tool, a company needs to use platforms like Google ads or Bing ads, etc. However, there are various techniques to gain maximum from SEM by aiming at optimizing the search engine, paying the least for a click, hitting the 1st Search Engine Result Page (SERP) and acquiring maximum conversions from paid ads (Forsey, C. 2020).

SEM is a complex domain and involves multiple fundamentals such as a.) Keywords: these are specific words or phrases that are associated with a company, and every time an individual types these words, a relevant search result is shown on the SERP b.) Concordance: when running a paid ad, the brand needs to define the degree of similarity between the chosen keywords and the words typed by users, ensuring that the desired result appears even if a synonym of the keyword is typed c.) A text ad is a basic paid ad that consists of a customizable title, URL, and little description and is presented in the SERP d.) Ad group, consisting of Ads in the same category, makes it easier for the consumer to pick up a desired product, e.) The campaign is an umbrella term and can engulf multiple ads with a similar agenda for example, if you sell motor parts, then three different ads for tyres, paint and body shop can run under a single campaign f.) The landing page is the

resultant page after clicking the sponsored ad; it is to be made sure that the keyword, the ad shown and the landing page are in symmetry for the ease of the user. This page should be customised in a way to direct users to take a certain action, like filling out a form for a freebie g.) The search network is the place where the ad appears, the top and right of the SERP are most often noticed for most ads h.) Impressions, number of views on the ad i.) Clicks, no. of clicks on the ad j.) CTR, the ratio of clicks to impressions k.) CPC, cost per click, l.) Quality score is the score awarded to the enterprise by the search engine, and it influences cost per click. It's based on the convergence of the ad, the experience of the landing page and several clicks obtained. This parameter is of utmost importance for obtaining clicks at the lowest price (Tomas, D., 2022).

Conclusively, SEM is considered one of the best strategies for start-ups, especially those that are bootstrapped and have limited resources. SEM provides businesses with a diverse array of customisable options to choose from, and the payment is based on the results achieved. This ensures that businesses only pay for the success they achieve through their marketing campaigns additionally, if a brand does well, then subsequently, the complexity of the ad campaign can be increased.

Specifics of Brand Website: In today's digital age, brands and companies need to establish a strong online presence. The changing consumer behavior and buying habits have mandated brands to launch their online website to increase both reach and revenue. However, there are multiple other factors for which a brand should air its website (Balegar, D. and Thakkar, A., 2022). Websites help brands to grow organically and gain credibility

among the masses by making them stand out. Consumers today are hungry for transparency and information from the brands they are buying from (Balegar, D. and Thakkar, A., 2022). It will be in the best interest of a brand to explain to their consumer why and how they can benefit from their merchandise. Thus, a website helps an enterprise to become a brand in all ways (Council, Y.E., 2022).

A website allows a brand to enhance its reach by increasing the number of leads. Once people find a brand online and are interested in the merchandise, they will dig deep into its details. If the content is done right, the chance of a visiting consumer becoming a buying consumer increases exponentially. Thus, websites are an expensive affair initially, but if used accurately, they can help brand progress at multiple levels, including positive ROI. Websites also help brands score organic traffic by optimizing it with search engine optimization, which increases the chance of the brand increasing its customer base drastically (Balegar, D. and Thakkar, A., 2022). Consumer care is another forte that could be addressed efficiently by a brand website. Instead of answering calls and emails, brands can directly put important information on their website for customer assistance. It will save both consumers and brand time (Council, Y.E., 2022). As a website is a 24*7 affair, it becomes convenient for a brand to post all advancements and information for its customers (Balegar, D. and Thakkar, A., 2022).

Lastly, if a brand is thinking of shooting up its sales by running digital marketing campaigns and paid ads, the website is going to act as a landing page and record all the

eligible consumers. A website will also assist in identifying potential consumers by tracking history, which will further aid digital marketing strategy. All in all, a website is a must-have entity for a brand, and there is no going anywhere without it. The type and quality are a different story, but having one is a must (Council, Y.E., 2022).

E-commerce: Since the year it was invented in 1989, e-commerce has been continuously changing the face of both marketing and shopping. E-commerce benefits all scales of enterprises, ranging from start-ups to mega brands, as it allows sales of products and services through the Internet. Simultaneously, the technology influx has influenced consumer behaviour in a way that they expect a handy and quick buying experience from brands. Various factors make e-commerce one of the most important constituents of the digital environment concerning the business sector (Clack, M.D., 2022).

E-commerce allows a brand to run its operations cost-effectively as it facilitates an online store with no electricity, water, or maintenance bills. Additionally, e-commerce is available 24*7, whilst a physical store will have fixed timings. Start-ups can largely benefit from e-commerce as they potentially reduce costs and exponentially increase the reach and presence of a brand. Talking about reach, it can also help brands to go global and break geographical and linguistic barriers, as a website can be translated into different languages. With E-commerce, the whole world has become a marketplace, and every brand can reach its consumers in any corner of the world (Clack, M.D., 2022).

E-commerce is a remarkably effective tool for broadening a brand's horizon in terms of products and revenue. It allows a brand to reach both B2B and B2C ventures and increase

their brand awareness. Unlike traditional stores, there is no need to open multiple branches a single website can act as a global store. Furthermore, listing on platforms like Amazon also provides opportunities to market the product and run different campaigns on their portals. Referring to opportunities, multifarious fortes are open for brand promotion through e-commerce, such as SEO, social media marketing, SEM, sponsored ads, etc. The exploitation of these resources can drastically improve a brand's position and reach amongst the masses. For example, using SEO can facilitate the showing of your brand in the 1st SERP and through social media and email marketing, you can build trust with your customers through ratings and reviews (Clack, M.D., 2022).

E-commerce is the most convenient shopping option available. It allows a brand to fit into the hectic lives of its potential customers and fulfil their needs, utilizing less time and effort as compared to traditional shopping methods. Customer convenience: e-commerce provides a personalized shopping experience by saving the customer's details after their first purchase and preparing a list of purchases they have made in the past. It also recognizes the class of products a consumer is interested in and highlights products in a similar category to ease the consumer buying the product. Reducing consumer effort in shopping will certainly improve a brand's image on the internet by posting ratings and reviews. Selling on e-commerce is of utmost importance to gather customer feedback at ease the consumer to gather higher ratings and reviews and the security offered by e-commerce on online purchases (Clack, M.D., 2022). If reports are to be believed, transactions done through the internet are safer than those done on a physical store of

course, the website should have an SSL certificate. It's also logical as an online transaction is mostly carried out in a closed space such as an office or home where no one can spy on your secret number additionally, the prevalence of one-time passwords has made things safer as compared to traditional transactions. Conclusively, it could be stated that enterprises can enhance their sales and trust among the targeted audience along with it, they can improve their reach and popularity amongst the masses using E-commerce (Clack, M.D., 2022).

Mobile Payments: Business owners have very efficiently integrated technology into their business models for all the perks it allows them to enjoy. Mobile payments are one of the most convenient tools; they not only makes the transaction secure but also ease the consumer of carrying cash or a card with them (Roesler, P., 2020). In a study titled “The Modern Wallet: Mobile Payments are Making Life Easier”, it was recorded that 29% of the American population that uses mobile payment have an annual income of approximately \$100,000 per annum. This points towards the fact that the economically well-off segment of the society is interested in mobile payments, especially for brick-and-mortar businesses such strategies can immensely help in promoting their businesses online. Furthermore, this study reported that 55% of mobile payment users are in the age group of 18-34, 10% are 55+ and 35 are 35-54 years old (Nielsen, 2022). This data concretely verifies the fact that mobile payments are extremely popular in all the present generations. Every emerging or existing brand ensures the inclusion of mobile payments in its digital marketing strategy for several reasons. As per a study conducted by IDC Financial Insights,

recorded, streamlined loyalty programs are a crucial factor for consumers to decide the payment method. Exploiting this trait, mobile payment applications run continuous reward programs through which consumers can redeem free points and perks that they can use in their subsequent purchases (Ben, S, 2021).

Thus, it is significant to study consumer behaviour and ACG spontaneously to capture a larger share of the market. Mobile payments play a dual role by running reward programs firstly, they ensure repetitive footfall on a brand's website. Secondly, they provide additional discounts on products through redeemed points and cashback offers, benefiting both the brand and the payment platform.

Mobile Application: Like websites, mobile applications have also become a vastly popular tool of digital marketing for brands. It ensures these companies build a loyal customer base and boost their sales. Additionally, it also facilitates easy checkout for the consumers. Various brands like Amazon, for instance, their platform for doing business is the internet, in such cases, applications are mandatory because it is significant to provide the consumer with all the benefits a conventional brick-and-mortar store would. Thus, the mobile application, in this case, builds a digital environment through which the consumer experiences the same security as they would have in a conventional store. Furthermore, a mobile application also provides various other benefits such as a personalised experience, packages, easy checkout, redeem coupons, points for additional discounts, etc. Conclusively, a mobile application is a loaded package that is offered by a brand to its consumers to gain their loyalty and increase its revenue.

Considering the marketing innovations mentioned above, it's evident that digitisation has had a significant impact on marketing strategies globally and has affected all fields of business. Particularly start-ups because strategies like SEO, SEM, content marketing, and social media marketing help these revenue constrained entities attain better investment ratios. Thus, a digital marketing environment has been created to nurture budding start-ups.

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social media marketing help these revenue-constrained entities attain better investment-to-return ratios. Thus, a digital marketing environment has been created to nurture budding start-ups.

2.2 Digital Environment and Consumer Behavior

The digitization of information exchange has transformed digital marketing into one of the most critical pillars of a successful marketing strategy. Multifarious pathways of digital marketing have influenced consumer behaviour at multiple levels. Digital marketing provides an array of opportunities for a brand to connect with the consumer, which in turn affects a consumer's perception towards the merchandise. However, it also creates a sense of awareness for the consumer by putting all the options on the table. It also enables the customer to precisely look at alternatives, pros and cons, and brand images of the respective products and brands. It navigates the consumers towards the best buy options through e-commerce platforms (Global, S. and Stafford Global., 2022).

The consumer's behaviour is a crucial factor that shapes a brand's digital marketing strategy. The digital shift has revolutionized the e-commerce market and has exponentially increased consumer footfall on platforms like Amazon, eBay, Flipkart, etc. Especially in the post-pandemic phase, upon imposition of lockdowns, the people couldn't leave their homes. As per a McKinsey global survey of executives, the Covid-19 pandemic has futurized the strategy of businesses in almost all domains over several years (LaBerge, L. *et al.* 2021). That's when the digital shift proved to be vital for brands and the engagement of

consumers on social media directed towards more extensive digital marketing campaigns (Carroll, M. 2022).

The rapid growth of the sales of E-commerce giants like Amazon compared to traditional sales can be very well attributed to the COVID-19 crisis. The pandemic forced many businesses to shift online as traditional store culture was down due to lockdowns and government regulations. This amplified the online attention of businesses immensely and led to the creation of numerous websites and investment in existing ones. The technological advancements in supply chain, coordination, accessibility and finance have made it obligatory to design consumer-centric models.

In a study published by McKinsey in 2009 (McKinsey & Company 2009), a circular consumer decision funnel was presented, which showed a novel strategy for decision-making. As per the model described, the consumer decision is divided into four cyclic stages.

Firstly, the trigger wherein the consumer is stimulated to buy an article. Secondly, the research phase, in which the consumer compares assorted brands and products on different parameters. Thirdly, at the moment of purchase, the consumer finally buys the product from a respective brand. Fourthly, the loyalty loop: in this stage, the customer is already loyal to a brand and does not consider other brands. The loyalty loop is hard to create for a brand as the consumer constantly discovers new information on existing and new competition. A brand needs to critically figure out the consumer's interests and should

ensure fulfilling them by value addition. Lastly, in the post-buying experience, several factors contribute here: product quality, service provided by the brand, product longevity, etc. This step is of utmost importance in creating the loyalty loop as distinct brands may offer a product with similar specifications, but the post-buying experience builds the loyalty of the consumer and improves brand image through word-of-mouth marketing, which is crucial (Court, D. *et al.* 2021).

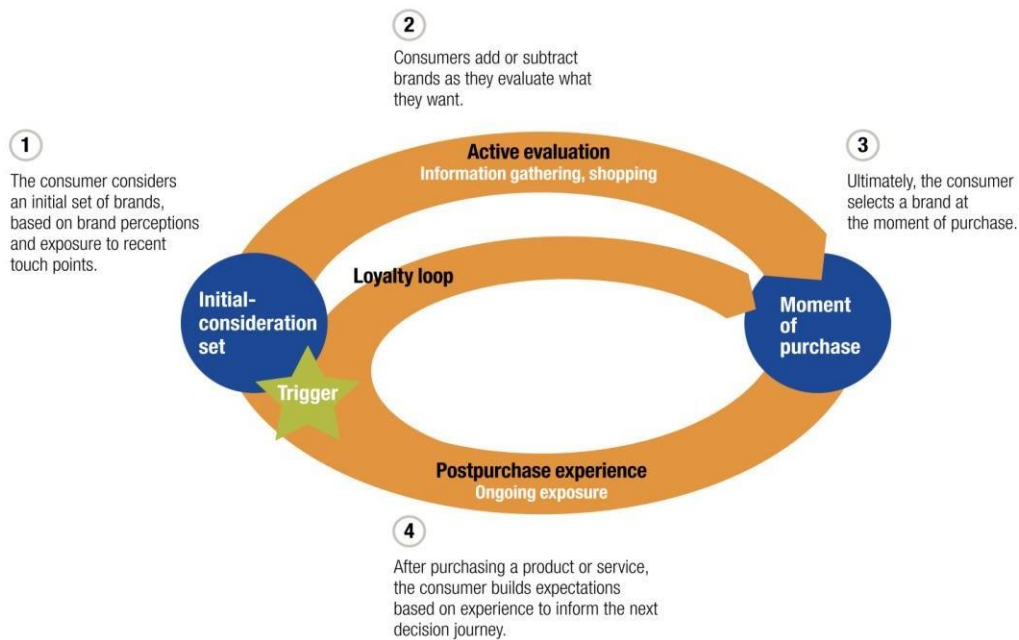


Figure 2 : Four cyclic steps of consumer decision making (Court, D. *et al.* 2021)

According to a study by Hyorung Nam and PK Kannan, the consumer decision-making process involves several touchpoints that a consumer experiences before making a purchase, following a cyclic pattern. Primarily, consumer decision-making is divided into three stages: a. pre-purchasing, b.) purchase, and c.) post-purchase. This is a common

model used in marketing to understand the distinct phases of the consumer decision-making process. Whilst the consumer completes the purchase journey, there are multifarious motivations instigated by touchpoints. These can vary in distinct phases of the journey (Nam, H. and Kannan, P.K., 2020). Lemon and Verhoef (2016) pointed out four major types of touchpoints: brand-owned, customer-owned and social/external touchpoints and each of these had a pivotal role in shaping the consumer journey.

Brand owned: Touch points are in the control of the brand, and it solely depends on the firm on how they want to interest the consumer. The brand website, mobile application, SEO, social media campaigns, e-mail marketing, and influencer marketing, for instance. These touch points allow the firm to maintain a close relationship with the consumer by continuously contacting and influencing their digital existence. It becomes effortless for a brand to connect with the consumer if they are consistent with this touch point. It equips the brands to keep the client posted about different offers, discounts, redeem offers, etc. Additionally, it facilitates the firms to keep the clients informed on upcoming and existing innovations in the products. Finally, it increases the visibility of the brand on the client's social media and email accounts. All these factors, in some way or another, contribute towards building a strong consumer-brand relationship that prominently influences consumer decision-making and behaviour (Lemon, K.N. and Verhoef, P.C., 2016).

Brand-owned touchpoints are of great significance for start-ups because they allow them to communicate or at least leave their message for the concerned target audience at nominal

costs. Social media marketing exponentially increases the visibility of start-ups as compared to traditional marketing strategies.

Partner Owned: Touchpoints are the ones where a brand collaborates with an external entity to interest the consumers. For example, a brand conducting its SEO with Google is partnering with Google through its SEO to influence its consumers by generating partner touch points. Price comparison websites and marketing agencies also lie in the same cluster as the brand builds tie-ups with these bodies to intensify its visibility over the internet. This specific touchpoint can be critical for firms as it can significantly improve the visibility of the brand, leading to exponential growth. Further, it allows the brand to stretch its organic reach to the targeted audience, which is far more impactful than sponsored ads and paid ad campaigns on search engines. However, paid ad campaigns and sponsored ads are also part of the same touch point group as the brand here takes the support of an additional autonomous platform to amplify its visibility and reach (Nam, H. and Kannan, P.K., 2020). Partner-owned touchpoints can prove to be a boon for start-ups as the partnership with autonomous platforms will provide a vast arena for digital marketing, which in turn will enhance the brand reach and customer base. Moreover, price comparison websites will provide an edge to start-ups in the initial years for leveraging their low-price strategy to the fullest. Marketing agencies will also play a vital role in shaping the digital marketing pathway because every start-up founder doesn't need to be a marketing guru. Thus, in the initial years, a start-up must pair up with a marketing agency to correctly understand the digital marketing of their merchandise.

Social: Touchpoints are fundamentally word-of-mouth advertisements but on digital platforms. For example, customer reviews on Amazon, Flipkart, eBay, etc. Any kind of interaction with peers, distant social groups and friends could be referred to as social touch points. Social touch points are significant in all stages of the customer journey but primarily affect the pre-purchase and purchase stages because that's when the consumer looks out for organic reviews and information provided by people who have already bought the product (Risselada, H. *et al.*, 2014).

Social touchpoints are of higher significance than all other mentioned touchpoints combined for start-ups. User reviews and testimonials give a sense of assurance to prospective customers. It triggers the consumer journey by giving the brand an edge over other brands. For example, if there is a food supplement available on Amazon and four varied brands selling it. A new customer, during his research phase, will surely look at customer reviews and ratings. This research will lead him to the brand with maximum positive reviews and make the respective product the strongest buy option. Similarly, if there is a WhatsApp group about products for healthy living and a product gets good publicity there, it will trigger the purchase cycle for prospective customers.

Technology-based: Touchpoints form the basis of interaction of all aforementioned touchpoints. The consumer journey is an interdisciplinary affair, and technology is the bridge for coordination. For example, for partner-owned touch points, the content created by partner firms needs a display platform for reaching the audience (Verhoef *et al.*, 2017).

These platforms can be different but use similar technology. Likewise, for social touchpoints, a customer review influencing the prospective customer will be displayed digitally. Thus, technological innovation is obligatory for touch points to function. Mobile applications, brand applications, virtual agents, augmented reality, and virtual reality are tools for technology-based touch points (Kannan and Li, 2017). Mobile applications create an extremely personalised environment of shopping for consumers by precisely managing the search history items preferred and awnings the consumer to share content digitally seamlessly. Furthermore, features like face recognition and fingerprint scanners make transactions instantaneous and enhance consumer comfort. Gamification is another strategy to amplify customer engagement (Esingerich *et al.*, 2019). Conclusively, these technological interventions contribute to an immensely interactive, convenient, and dynamic consumer journey.

Undoubtedly, technological touchpoints are crucial for start-ups because, in scarcity of funds, social media becomes their invisible arm, which is completely supported by technology. It ensures the maximum spread of a start-up's message to its desired audience by constantly improvising the coordination between different touch points and comforting the consumer journey for the consumer

2.3 General Framework of Digital Marketing Strategies

Considering digital touch points and various other tools, it is critical to propose a

framework for effective digital marketing. However, the framework cannot be put to work until a deep insight into its elements is attained. A study conducted by P K Kannan et al., 2017 presents a framework, but it's general and does not affiliate with a specific business domain. Our point of focus in this disclosure is Indian start-ups focusing on nutraceuticals and cosmetics prepared using ayurvedic and medicinal mushrooms. For a tailored digital marketing strategy, we require the respective study as a generalized reference model (P K Kannan *et al.*, 2017).

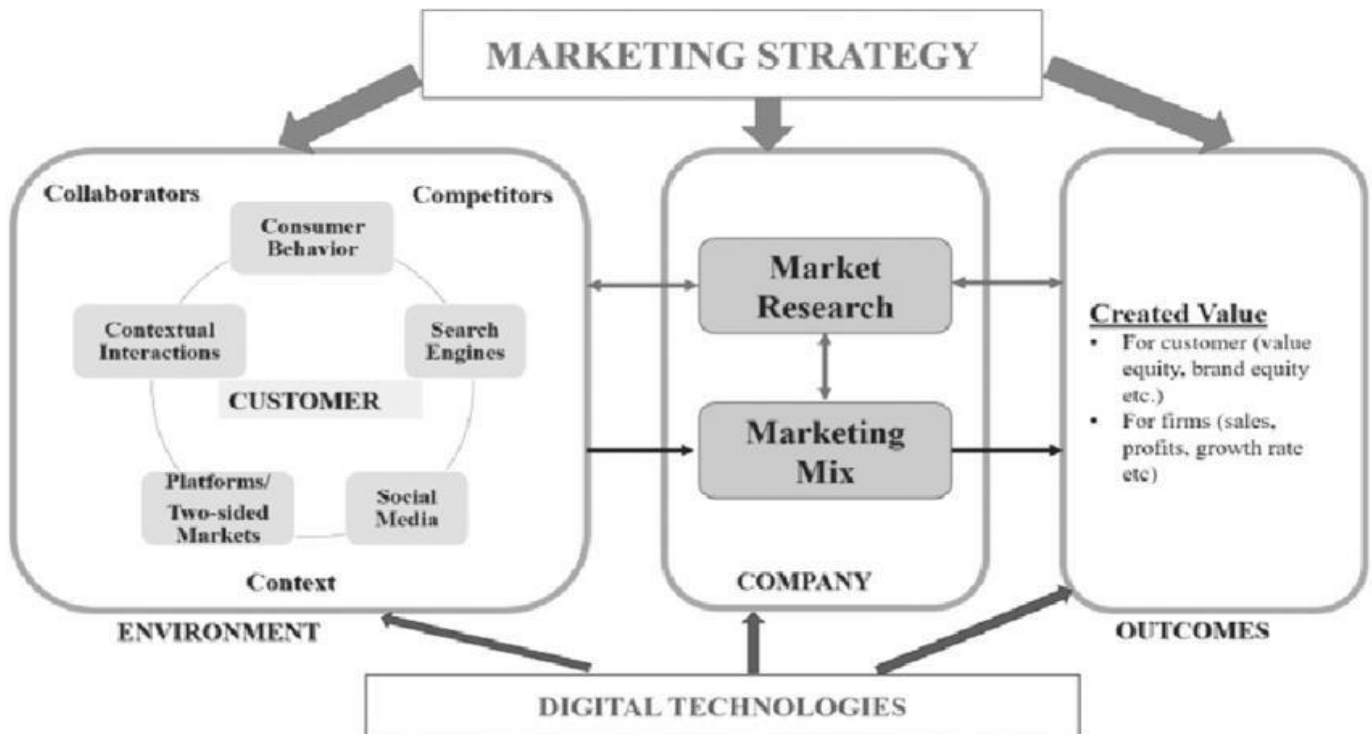


Figure 3 : General framework of digital marketing strategy (P K Kannan *et al.*, 2017)

A standard marketing strategy majorly covers the five C's: customers, collaborators, competitors, context and company, and we are going to follow the same standardization

but in the digital environment. These elements are mentioned in box 1 (from the left) of Figure 3; it is a circular system with customers considered as the central entity whilst competitors, context, and collaborators contribute to the working environment of the brand. The disclosure is to elucidate the role of digital technologies as an interface for the interaction of the five C's. Multiple concepts and structures resulting from this interaction are recorded and studied. For example, search engines, social media, user-created content, institutions and structures, concepts, and contextual interactions. The elucidation covers all constituents of a marketing mix- product/service, price, place and promotion. Furthermore, the data collected is interpreted to complement the digital marketing strategy overall. In this study, the role of digital technologies in melding the marketing strategy, accusation, and interpretation of the data for the company is studied (P K Kannan et al., 2017).

Furthermore, the outcome of the mentioned approaches using digital technologies is evaluated in terms of *value creation for consumers* (customer satisfaction, brand, relationship and value equity), *customer value* (accusation, retention and profitability), and *firm value* (sales, profits and growth rate). Conclusively, the presented framework of strategies identifies touch points associated with marketing and simultaneously, the role of digital technologies as an interface for these actions is evaluated (P K Kannan et al., 2017).

The framework also identifies the shortcomings of digital technologies, which significantly affect the company's growth. The next section shines light on each of the elements of the framework (P K Kannan et al., 2017).

2.4 Fundamentals of the Framework

The operating environment of the companies is largely affected by digital technologies (Box 1, Figure 1). Digital technologies limit the disparity in terms of information between the company and its consumers significantly. The changing consumer behaviour due to various digital technological interventions in both online and mobile contexts is critical. The framework elucidates the effects of the changing customer behavior in terms of profitability, customer relationship and data accusation concerning the company. Further, consumer-consumer interactions are highlighted on social media and User Generated Content (UGC) word of mouth through ratings and reviews. Additionally, some platforms generate revenue by providing a marketplace for brands to sell their merchandise and connect with their audience (Rust et al., 2004). However, these two-sided markets (Amazon, Alibaba, Flipkart) are equally significant for consumers as they ensure the availability of all the products lying in a particular category. All in all, these platforms act as collaborators for better buying and selling experiences for companies and consumers, respectively (Rust et al., 2004). Similarly, companies must comply with the search for both collaborations and sales for customer accusations as it is a very competitive domain because all the competitors get a platform for interaction with the targeted audience. Lastly, the contextual interaction of digital technologies based on geography, privacy and safety, regulation and piracy in terms of marketing strategy (Rust et al., 2004)

Digital technologies have immensely altered the concept of products for the company (Box 2 Figure 3) in three ways to provide novel value proposals for the customer. Firstly, binding the product (Box 2 Figure 3) with digital service, secondly, networking of products to filter out the least effective contender, and lastly, shaping products into digital services. These services allow the brand to provide a tailored experience for the consumer by amalgamating different value additional offers to attract consumers (Edleman and Singer, 2015). The amalgamation of value-added proposition raises a pricing (Box 2 Figure 3) concern for the companies as they reduce the list prices of the products, but at the same time, they provide a chance for dynamic pricing and yield management. Furthermore, approaches like auctions of products, keyword searches, and price strategies have developed a distinguished market to which a company has to comply because the number of competitors in the digital arena is limitless (Shankar et al., 2010). However, these strategies keep the brands on their toes, which is cumulatively beneficial for both brands and consumers because they always have exceptional value to provide their consumers with (Shankar et al., 2010).

Digital technologies have drastically evolved modes of communication, traditional approaches like radio, print, and television have been completely taken over by modern-day interventions such as social media, E-mail, UGC, and search engines (Xu et al., 2016). These technologies have increased the reach of brand manifolds as compared to traditional methods and positively affected the promotion of products/services (Rust et al., 2004) New marketing techniques, such as location-based and personalized promotions, are currently being widely used to promote specific products and services and provide

consumers with detailed insights into them (Edelman and Singer, 2015). Moreover, multifarious channels have developed over time, which complement digital promotion by adding value to customer accusations and aiding the buying experience of the consumer. For example, e-mail marketing is a tailor-made mode of promotion that uses e-mail technology as a channel and is specifically delivered to a designated audience (Rust et al., 2004)

The digital technologies discussed above can be assessed at multiple levels concerning outcomes (Box 3 Figure 1) for a company- value for the consumer and value for the company (Edleman and Singer, 2015). The outcomes are purely based on the strategic steps a company takes by utilizing the existing digital technologies and creating value for customers and the company itself. Figure 1 clearly points towards the potency of tactical actions taken by a firm utilising digital technologies for accomplishing various touch points for marketing.

2.5 Ayurveda: Past, Present and Future

Ayurveda is an amalgamation of two Sanskrit words: “Ayus”, meaning “life” and “Veda”, meaning “scientific knowledge”. Together they mean “Scientific knowledge of Life concerning “Body, Mind and Soul” (Mukherjee, P.K., 2001). Ayurveda has been practiced since the pre-medieval era or even earlier; there are records of it being practiced since the 5000 century BC (Dasgupta, S., 1992). Ayurveda could be referred to as a holistic attitude

towards life, disease management and health through several parameters like diet, traditions, practices, spirituality, and lifestyle. These practices and traditions involve the use of multiple medicinal herbs, minerals, forms of exercise and breathing (Ninivaggi, F.J., 2010). Ayurveda was developed utilizing the symbiotic relationship between all life on the planet and is aimed at preventing, mitigating, and curing diseases in a natural way. Thus, it could be stated that Ayurveda is a wholesome traditional medicinal system developed by aligning elements of the planet to design a harmonious approach towards a healthy life (Hildreth, C.J., 2008).

During the Vedic Period (5000 BC) in India, healing and medicine were practiced by a sect of specialized people referred to as “Ascetic Tribes”. History claims in Vedic India; knowledge was imparted in two different manners: “Shruti” (Hearing) and “Smriti” (Memorizing). Ayurveda was primarily developed through the memorization and written transmission of knowledge, with various esteemed sages providing extensive insights into medicine and surgery (Kapoor, S. ed., 2002). The Insights provided by sages were very carefully interpreted and documented on leaf parchments (Taalpatra) in a specialized version of the Sanskrit language called “Laukika”. The Vedic texts are recorded in the form of “Shlokas” (hymns), referring to poems explaining a special scenario or situation. The Ayurvedic texts are majorly explained in “Rig-veda”, almost 1027 hymns, the oldest of all four Veda, namely “Rig-veda, Sam-veda, Yajur-veda, Atharva-veda (Singh, J., Bagchi, G.D. and Khanuja, S.P.S., 2003).

Over the centuries, Ayurvedic texts have gained enormous significance across the globe they were first translated into Greek in 300 BC, followed by translations to Chinese,

Persian, Arabic and various languages in 300 BC, 400BC and 700BC, respectively (Mukherjee, P.K., 2001). A book named “Indian Materia Medica” is a renowned source for ayurvedic remedies and formulations concerning medicinal plants. The document contains up to 2000 drug molecules originating from natural sources. It’s documented that 200 of the 2000 formulations are animal or mineral-based, and the rest are all based on plant sources. However, there are still some undocumented practices that are quite popular in rural India (Mukherjee, P.K., Venkatesh, M. and Kumar, V., 2007).

The Vedic texts directly co-relate Ayurveda with cosmic creation. According to Ayurveda, all creation in the known universe is made of five primary elements, the first being Space, followed by Earth, Air, Water and Fire, which lie under the element space (Anonymous, 2001a). There are two types of cosmic creations, namely microcosm (Humans) and macrocosm (Universe). Since both the creations are made of the same five elements, there exists an unbreakable bond between the two (Heyn B., 1990). Humans are a mere organisation of the different processes of nature and owe their sole existence to the cosmos. There are three major biological humors, namely Vatta (space and air), Pitta (fire and water), and Kapha (water and earth), which are responsible for all biological functions of the human body. Health in Ayurveda is considered to be a perfect balance between the body, mind and soul concerning Vatta, Pitta, and Kapha (Atreya, 2002).

Moreover, Ayurveda is not just the only form of traditional medicine system prevailing in India there are majorly four other systems, namely Yoga, Unnani, Sidha and Homeopathy. The Indian government has recognized these systems and assigned a special ministry, AYUSH (Ayurveda, Yoga & Naturopathy, Unani, Siddha, and Homoeopathy), responsible

for promoting and regulating these traditional systems of medicine and healthcare practices. The Ministry of AYUSH (MoA) takes all mandatory steps to develop and innovate industries related to the Indian system of medicine (ISM). Furthermore, they frame policies that could amplify the export of Ayurvedic and relevant products globally (MoA, 2022).

2.6 AYUSH; The Current Scenario of India & the World

The World Health Organization (WHO), in its 2019 report, “WHO Global Report on Traditional and Complementary Medicine”, stated that 88% of its registered nations have been recorded to use some kind of traditional or indigenous medicine systems. The native medicine systems are more economical, accessible and convenient for the users as they have been incorporated into the respective country’s culture. For Instance, AYUSH for India, traditional Chinese medicine for China. The WHO, in the year 2019, framed “Strategy for Traditional Medicine” for assisting medical practitioners worldwide to better understand these approaches. The two primary objectives of this strategy were, firstly, to support its members to better understand traditional medicine and attain maximum utilization of its potential to improve health and wellness worldwide. Secondly, to frame a people-centric healthcare system that will regulate products and practices related to

traditional medicine systems (World Health Organization,2019).

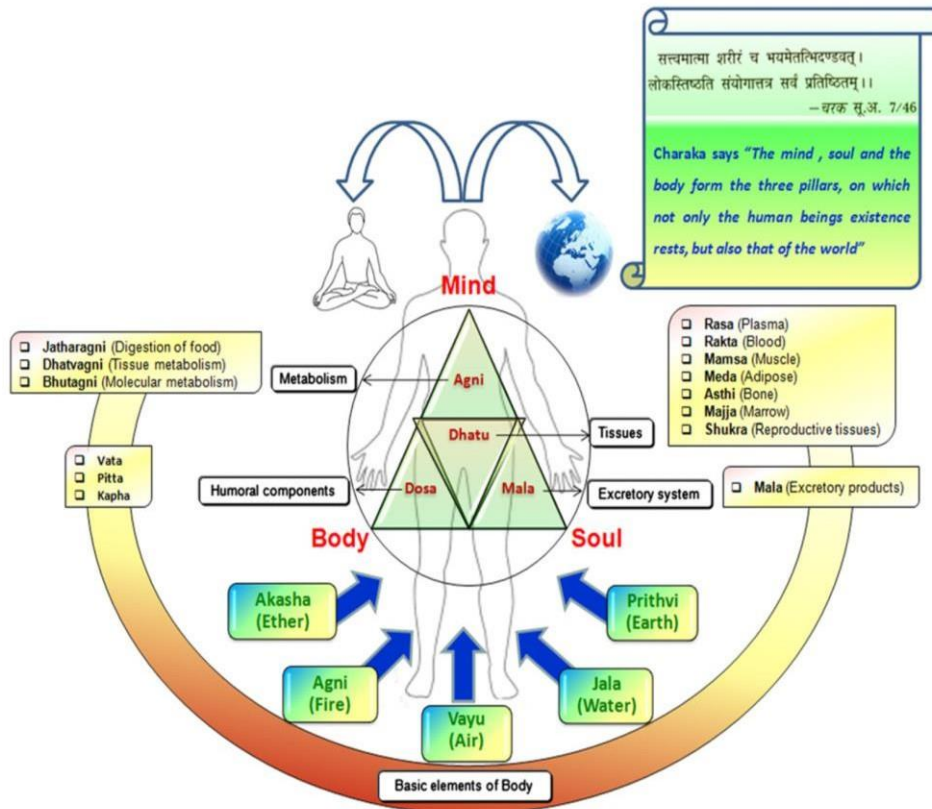


Figure 4 : Principles of Ayurveda, (Charak Samhita, 5 B.C.)

Considering India, the AYUSH cluster of medicine systems is equally popular in neighbouring countries like Pakistan, Bangladesh, Nepal, Bhutan, Myanmar, Sri Lanka, Indonesia, Maldives, and Thailand (*Who Global Centre for Traditional Medicine, 2022*).

The Demand for the AYUSH category has skyrocketed recently and has become one of the most rapidly growing industries in the Indian Economy. AYUSH has seen a sixfold

increment in its revenue from 3 billion USD to 18 billion USD in the last seven years (*Who Global Centre for Traditional Medicine* (Ians, 2022). In the last seven years, the budget assigned for the AYUSH industry by MOA has seen a fourfold increase from 691 crores in 2014 to 2700 crores in 2022. The overall market of AYUSH has increased by 17% from 2014 to 2020 and is currently generating more than 18 billion USD per year in revenue. Globally speaking, the overall share of AYUSH is 2.8% and is expected to grow at the rate of 15% during the period 2020-2025 (Ayush sector in India, 2020).

As per the World Health Organization (WHO), it's the "traditional medicine system of India". The global market of Ayurveda-based products has seen an upsurge due to the prevalence of the COVID-19 pandemic. Ayurvedic products have been both scientifically and traditionally evaluated for their immunity-boosting character. Majorly the Ayurvedic market is segmented into personal care, skin care, health care, hair care products. The US and Canada are major export markets for Ayurvedic prod, cuts followed by Arab countries and Europe. However, the regulations imposed on these products have recently tightened in various parts of the world. Thus, each product needs to be analysed on multifarious parameters to be sold worldwide. The need for such extensive regulatory bodies arose when multiple products showed high concentrations of heavy metals and pesticide residues upon testing. Furthermore, the regulatory bodies in manufacturing countries like India were not conducting satisfactory assessments of these products before export. However, the scenario is now changing rapidly as the FSSAI, the regulatory body in India, has released new guidelines for Ayurvedic products, especially in the export category (Bharti P, 2019).

Initiatives of the Ministry of AYUSH (MoA)

The MoA is putting in all efforts to promote AYUSH on both national and international platforms. In terms of global promotion, the MoA has been in constant collaboration with WHO to prepare and implement benchmark documents for training and educating ayurvedic practitioners worldwide. The Traditional Medicine chapter of the Classification of Diseases-11 report of WHO has been revised, and a second module has been added for a better understanding of AYUSH practices. A mobile application, M-yoga, has been developed to complement the research and development of the International Pharmacopoeia of Herbal Medicine and several other institutes for exploiting the full potential of AYUSH (Nesari, T.M., 2022).

The MoA has been working tirelessly to promote AYUSH at the global level, multifarious efforts have been made to gain international recognition and facilitation of trade globally by negotiating at bilateral and multilateral levels. A specialised board called the “AYUSH Export Promotion Council” works round the clock to boost the export of AYUSH-based goods worldwide. Various foreign nationals have been awarded scholarships to study and absorb courses based on AYUSH practices. Further, the MoA funds various institutes in India to participate in different conferences around the world, and officials have been deputed in different countries to gain insight into regulatory policies for Traditional Medicine affiliated products. Furthermore, MoA has teamed up with the WHO and the International Organisation of Standardisation (ISO) for better quality of AYUSH-based products and practices (Food Safety and Standards Authority of India (FSSAI) & MoA formulates regulations for 'ayurveda Aahara' products (no date, Press Information Bureau).

AYUSH-based products in India are regarded as food. Thus, the MoA has partnered with the Food Safety and Standards Authority of India (FSSAI) for better manufacturing practices. Additionally, a special diet referred to as 'Ayurveda Ahara' has been designed to amplify the popularity of Ayurveda-based recipes. Moreover, the collaboration between FSSAI and MOA is also for better regulation of policies framed for manufacturing of AYUSH-based merchandise (Food Safety and Standards Authority of India (FSSAI) & MoA formulates regulations for 'ayurveda Aahara' products (no date) Press Information Bureau).

India is a renowned digital environment user, and for AYUSH-based products, the case is no different. Multifarious information technology-based initiatives have been taken up by the MoA, including AYUSH hub, AYUSH Next, AYUSH Grid, and AYUSOFT for the promotion of AYUSH-based products via digital technology. In collaboration with ISO and the Bureau of Indian Standards (BIS), the MoA has developed a working group 10 for better simulation of AYUSH-based products before manufacturing using the "Health Informatics" platform. This allows the industries to have a deeper experience in a prospective formulation before investing heavy capital into its production (Nesari, T.M., 2022).

The idea of nutraceuticals is not new to the Indian consumer, as the science of Ayurveda has persisted since pre-historic times. The prevalence of traditional medicinal practices in India has encouraged multifarious brands to develop novel formulations using plant and fungal extracts (Gunjan et al., 2015). However, the official regulations imposed on nutraceutical and dietary products by the Food Safety and Standards Authority of India

have become stringent recently. Following the norms to be followed by nutraceutical products in India.

1. The quantity of Ingredients in a nutraceutical must not exceed the recommended daily allowance (RDA -- recommended daily allowance).
2. All labels must state the class, targeted audience, conditions of use, etc.
3. Claims on immunity, ageing, and sexual wellness will be approved directly by FSSAI (Food Safety and Standards Authority of India)
4. No ingredient will be in a higher concentration than the RDA.
5. For nutraceutical products, it's obligatory to mention the term 'Nutraceutical'.
6. For foods targeting weight loss, the total protein content must be less than 50g.
7. For pro and prebiotic products, there should be no mention of prevention, mitigation and eradication of a specific ailment (Yadav, J., Tripathy, S., Dahiya, M. and Dureja, H., 2017).

Initiatives Of All India Institute of Ayurveda (AIIA)

The AIIA was set up to address the rising global need for Ayurveda. The institute aims to build a bridge between existing traditional knowledge of Ayurveda and modern technologies by running various multidisciplinary programs for teaching and research. The International Cell for Ayurveda has been formed by AIIA to collaborate with various chairs of Ayurveda and empower different centers of Ayurveda globally. Additionally, foreign nationals studying Ayurveda in India are imparted special courses for a better understanding of the practices. Furthermore, AIIA has immensely collaborated with

universities from Germany, France, the USA, the Netherlands, Spain, Canada, the United Kingdom, and Brazil and has signed more than 14 memorandums for the exchange of knowledge (Nesari, T.M., 2022).

The Ayurveda Day celebration since the year 2016 through efforts of MOA on 'Dhanvantri Jayanti' has been a great success for the promotion of Ayurveda globally. The primary goal of Ayurveda Day is to achieve 'PERFECT':

Promotion of Ayurveda globally,

Exploration of Ayurvedic potential for the betterment of human society,

Reduction of stress on molecular medicine through Ayurveda,

Focusing on the novel strength of Ayurveda and enhancing its utilization,

Enhancing trust in Ayurveda,

Creation of educating campaigns for awareness of Ayurveda,

To establish a scientific base for Ayurvedic practices.

It is through these initiatives Ayurveda has been promoted as one of the strongest pillars of traditional medicine systems and is globally acclaimed. The AIIA, with its novel strategies, is working day and day out to form a cloud that contains knowledge and practical skills for research and development in the field of Ayurveda. In a nutshell, the AIIA aims to benefit all its stakeholders in uniform knowledge and improve the quality of life globally (Nesari, T.M., 2022).

Furthermore, AIIA is supporting the cause of Ayurvedic entrepreneurship by exploiting the monetary aspect of the domain. A specialised Incubation centre has been formed on its campus for the development and training of modern-day entrepreneurs on ideas relevant to

Ayurveda. This Incubation centre provides training and pre-seed funding for the development of a revenue-generating business. A designated fund is assigned to the incubation center, which it spends on qualifying candidates for enhancing and expanding their businesses. AIIA caters for all sizes of enterprises, from micro, small, to large, to nurture their vision into an established brand. Moreover, AIIA has partnered with the AYUSH subsector skill council, which comes under the health sector skill council to empower human resource strain in ayurvedic practices. Through this, they serve two causes: firstly, the expansion of ayurvedic practices worldwide with scientific professionals and generating employment for the youths of India and the world (Nesari, T.M., 2022).

2.7 Medicinal Mushrooms and Nutraceutical Industry

Mushrooms are an exquisite source of nutrition at a low-calorie cost. Recently, they have gained gigantic attention from health enthusiasts for their high protein, dietary fiber, minerals and vitamins (Barros L *et al.*, 2008). Additionally, mushrooms are known antioxidants and showcase excellent detoxification characteristics (Kalač, P., 2013). The fat profile of mushrooms is extremely low, for some mushrooms, it's as low as 0.3%. Complementing a low-fat profile is the cholesterol content, which is even lower and in some mushroom species, it is replaced by ergo-sterol, which is utilized by the body to synthesize vitamin D3. Further, mushrooms are a rich source of vitamin C, D, thiamine, riboflavin, niacin, pantothenic acid, vitamin B12 and folic acid. The mineral content in mushrooms is well comparable or even better than most green vegetables. Mushrooms have

been marked as significant sources of magnesium, calcium, manganese, potassium, phosphorous, iron, copper, etc. Thus, edible fungi can be considered a potential candidate for fighting malnutrition in developing countries (Pathmashini L. *et al.*, 2008).

In the post-pandemic phase, demand for specialized immunity-boosting mushrooms has skyrocketed. Various mushrooms have been marked to contain Host Defense Potentiators (HDPs), which not only regulate immune response but support it in building the humoral or adaptive immune system. There are specific bio-metabolites present in medicinal mushrooms like polysaccharides, exo-polysaccharides, nucleosides, alkaloids, triterpenoids, and complex starches, which naturally enhance the body's resistance against diseases (Yassin, M. and Mahajna, J.A., 2003). Some species of mushrooms, like *Cordyceps Militaris*, *Ganoderma Lucidium*, and Lion's Main Chagga, due to the presence of β -glycans, are classified as functional foods. These species of fungi have been extensively tested to be active against cardiovascular diseases, gynaecological problems, arthritis, etc. (Thompson, I.J. *et al.*, 2010). Thus, functional mushrooms are apt for people of all age groups and generations.

2.8 Mushroom Based Nutraceuticals

Nutraceuticals is a term coined by Ar. Stephen. L. De. Felice is defined as "Food (or a part of food) that provides medical or health benefits, including the prevention and/or treatment of a disease" (Brower et al., 1998). Nutraceuticals are extracted or the whole form of a food type that has been altered to enhance its health benefits. Mushroom nutraceuticals have been thoroughly researched since the last decade, and various forms and formulation types

have been developed to benefit a specific ailment (Srivastava, A., Attri, B.L. and Sharma, V.P., 2020). Most mushroom nutraceuticals are developed from their fruit bodies or mycelium, which is grown in a submerged or liquid culture. These fruit bodies or mycelium are processed in the form of powder blends, capsules, tablets, tinctures, etc or are consumed in their raw form. However, the research and scientific proof for most medicinal mushrooms is questionable except for some that have been extensively studied, for example, Cordyceps Militaris, Ganoderma Lucidium, Shitake, Chagga, and Lions Main. The benefits and properties of poorly studied mushrooms can vary for different manufacturers (Reis *et al.*, 2012).

Most mushroom-based nutraceuticals are available as blends of two or more different active biometabolites. It has been scientifically elucidated that a specific blend of medicinal mushrooms not only boosts immunity but enhances energy, stamina, vitality, neuron function, metabolism, hormonal balance and transport of oxygen and nutrients. Conclusively, it could be stated that medicinal mushroom-based nutraceuticals have immense potential and can change the face of the nutraceutical industry. However, the industry lags because of insufficient scientific research on some species (El Sheikha, A.F., 2022).

The following table 1 explains the nutraceutical potential of different medicinal mushrooms and specifies different health issues addressed.

Table 1 suggests medicinal mushrooms bear a strong potential to become candidates for the nutraceutical industry.

S.No.	Mushroom	Medicinal use	Reference
1.	Lion's mane (<i>Hericium erinaceus</i>)	Memory improvement	Hobbs, 1995
2.	Reishi (<i>Ganoderma lucidum</i>)	Antiviral effects like, anti-hepatitis B and anti-HIV	Kino <i>et al.</i> 198 Kim <i>et al.</i> 199 Liu and Chang
3.	<i>Pleurotus ostreatus</i>	Lowers the serum cholesterol concentration	Bobek <i>et al.</i> 19
4.	<i>Lentinula edodes</i>	Antitumor, enhance vigour, sexuality, energy and as an antiaging agent, inhibits HIV	Gareth, 1990, Chihara <i>et al.</i> 1
5.	<i>Cordyceps sinensis</i>	Memory improvement, sexual rejuvenator, restful sleep, acts as anticancer, antiaging, and antiasthama agents	Sharma, 2008
6.	Reishi, Cordyceps, Enoki, Maitake, Lion's Mane and Splitgill	Cancer treatment	Hobbs, 1995
7.	Shiitake, Blazei, Reishi, Enoki, Cordyceps, Maitake, Mesima and Oyster	Cholesterol reduction	Hobbs, 1995
8.	Reishi, Cordyceps, Shiitake and Maitake	Reducing stress	Hobbs, 1995
9.	<i>Auricularia</i> species	Hemorrhoids and various stomach ailments	Chang and Bu
10.	<i>Pleurotus tuber-regium</i>	Curing headache, high blood pressure, smallpox, asthma, colds and stomach ailments	Oso, 1997; Fa and Oloruma
11.	<i>Ganoderma lucidium</i> (Fr.) Karst	Anti-inflammatory agent; acts as anti-diabetic, treating joint pain	Stavinoha <i>et al</i> Teow, 1997, Harsh <i>et al.</i> 15
12.	<i>Pleurotus sajor-caju</i>	Renal failure	Tam <i>et al.</i> 198
13.	Reishi mushroom (<i>Ganoderma lucidum</i>)	Lower blood pressure and serum cholesterol	Kabir <i>et al.</i> 19
14.	Reishi, Cordyceps, Chaga and Lion's Mane	Asthma and allergy treatment	Hobbs, 1995
15.	Shiitake, Cordyceps, Chaga, Shiitake and Turkey Tail	Liver protectants	Hobbs, 1995
16.	Reishi, Maitake, Turkey Tail and Shitake	Treating diabetes	Hobbs, 1995
17.	<i>Coriolus versicolor</i>	Anticancer drug	Chang and Bu
18.	Puffballs (<i>Clavatia, Lycoperdon</i>)	Healing wounds	Delena, 1999
19.	<i>Lentinus tigrinus</i> and <i>G. lucidium</i>	Anticholesterolmic	Ren <i>et al.</i> 1985
20.	Maitake	Kill HIV	Nanba, 1993
21.	<i>Pleurotus sajor-caju</i>	Growth of probiotic bacteria	Oyetayo and O

Table 1 : Benefits of different medicinal mushrooms on various ailments and diseases (Rathore et al., 2017)

2.9 Ecosystem of Nutraceutical Start-ups in India

The nutraceutical industry of India has immensely flourished in the past decade and is targeted to achieve its 100 billion USD dream by 2030, suggests research conducted by Nutrifly Today, 2022. The growth was first noticed in the year 2016, and 2020 has proven to be a game changer for the nutraceutical industry in India. The COVID-19 pandemic was devastating for the entire world and resulted in vast destruction of both the planet and its people. However, the pandemic inculcated a sense of awareness in people regarding their immunity and general well-being. The nutraceutical industry in India was documented to grow at a higher rate of 26% during the pandemic, two times the anticipated value of 10%. Although the exponential growth trajectory normalized in the subsequent year 2021 at 16-18%, it is still higher than the global trend (Bureau, E.N., 2022).

Complementing the huge growth trajectory is the wave of science-based nutraceutical start-ups in India. Unlike the last decade, the new age start-ups launch their products post clinical trials amongst the consumers and collect relevant data to improvise their products. The nutraceutical industry has seen a 360-degree shift in its operations as, currently, the products are launched with immense research-supported data. The market has experienced a positive shift and is bound to remain the same in the future. Additionally, the Indian government has played a pivotal role in this development by stocking up nutraceuticals in their pharmacies. The 'Nutraceutical Task Force' (NTF) is a regulatory agency responsible for framing laws and regulations for the nutraceutical industry. The inclination of NTF

towards science-backed wellness start-ups has been a significant cornerstone for the immense growth of the nutraceutical industry in India (Bureau, E.N., 2022).

Primarily, four major milestones are fuelling the exponential growth of the Indian Nutraceutical Industry.

Cultivation of Medicinal Plants: India is a vast country and is blessed with more than 50 climatic zones. Additionally, the mention of numerous herbs in AYUSH has enabled different initiatives of the Indian government to motivate farmers to grow medicinal plants, which are of great significance in the nutraceutical market. Moreover, the IT blockchains ensure a transparent transaction between the buyer and the farmer through product fingerprinting. This allows only the best quality raw materials to reach the nutraceutical factories, resulting in products with higher efficacy (Bureau, E.N., 2022).

Active Nutraceutical Constituents: The Ministry of AYUSH has worked tediously to screen and select almost 1700 medicinal herbs from Ayurveda and make them available for the industry. This development has enumerated India as one of the hubs for medicinal plants globally. India is now seen as a bright candidate to achieve the 100 billion USD mark in the Nutraceutical industry (Bureau, E.N., 2022).

Novel Formulation Environment: India has the highest number of Food and Drug Administration (FDA) registered third-party manufacturers in the world. It is quite a possibility that the pharma industry takes interest in nutraceuticals and improvises the formulations using cutting-edge technology. Nanotechnology is one such tool that can boost the nutraceutical industry manifolds by increasing the efficacy of the products.

Additionally, some brands are into novel formulation development and combining various popular formulations into one (Bureau, E.N., 2022).

The Start-up Wave: India has registered more than 7400 nutraceutical start-ups in the past years and is anticipated to reach 10,000 marks within a year. It is these start-ups that are going to adopt these newer regulations and policies and introduce newer formulations with maximum transparency to the consumers (Bureau, E.N., 2022).

2.10 Summary and Discussion.

The Indian start-up ecosystem is being constantly complemented by the changing digital environment. Physical marketing, due to its poor cost-effectiveness, has become a dormant option for small-scale businesses. As per the literature sighted in section 1, Businesses today are entering the real-time age, meaning shopping has become a momentary affair. Unlike a decade ago when consumer behaviour was observed in days and months, today, a consumer's intention towards merchandise is judged in minutes and seconds. Internet connectivity has exponentially elevated the digital environment in all manners as it has allowed crowdsourcing, crowd marketing and crowd innovations into companies' digital marketing strategies for better client interaction. Digitization has primarily revolutionized three major constituents of business, namely information transfer, client interaction and data storage (Kotler, Cao, Wang and Qiao, 2020). Thus, it could be concretely affirmed that the digital environment is a gigantic uplifting factor for the booming start-up ecosystem in India. Additionally, the unmatched proficiency of Indian youth in information

technology fuels the fire for the better. All in all, India has and will become the start-up capital of the world in a decade.

Indian consumers, as per reports by Indian start-ups and experts, are difficult to convince. It becomes a massive job for a small-scale business to keep up with their consumer's expectations in India. Thanks to Bollywood, the Indian consumer's mindset is emotion-driven and relies on the brand connection rather than product quality and quantity. If a brand is emotionally connected with its consumers, then it becomes straightforward for them to easily convey their message to the consumers. Moreover, in India, consumers are extensively choosy about brands they use in their daily routine this has led to monopoly-driven markets in the FMCG (fast-moving consumer goods) sector. Ayurvedic Industry is no exception, prominent brands like Himalaya, Patanjali Ayurveda, and BaidyaNath Ayurveda are examples of monopolized Ayurvedic market in India. However, the Nutraceutical sector is still available for newer start-ups to affirm their spots in the market. Especially the ones with newer and novel formulations, cost-effective products and newer product constituents. The monopolized Ayurvedic market has created a void for novel dietary supplements, as old and conventional products have started to bore Gen Z consumers in India.

PlantBro Life Sciences Private Limited, 2021, India, is a start-up working on interdisciplinary lines of Ayurvedic nano-formulation design, mycology and organic agriculture. PlantBro Life Sciences grows its raw materials, i.e., medicinal herbs, using ancient farming practices called Vedic agriculture. Further, it cultivates a medicinal mushroom called cordyceps militaris in its state-of-the-art laboratory in vitro. Finally, it

processes and formulates nutraceuticals to work on defined ailments and abilities. It specifically focuses on nanotechnology-based techniques to prepare formulations. In this research, we intend to conceptualize different strategies followed by PlantBro Life Sciences in terms of marketing, branding, brand building, operations, etc. Further, we will study the response of Indian consumers towards novel fungi and nanotechnology-based functional foods. Lastly, a comparison of traditional business models and current digitally sound models will be presented for the nutraceutical market of India. (Based on information from PlantBro Life Sciences Private Limited in 2023.)

The Ayurvedic functional food market in India is vast, like the existing gap between products and consumers. Thus, the market has seen a dramatic shift in terms of both product lines and marketing strategies. An array of novel nano-nutraceuticals, functional foods and beverages is peculiar on e-commerce platforms. Yet, consumer unawareness and misinformation are a consequential bottleneck in successful market expansion. Therefore, brands nowadays prioritize transparency and provenance of product ingredients, certifications and regulatory assurances digitally via creating a digital environment. Hence, it is required to document new-age strategic marketing followed by brands to connect their technology with the audience. Moreover, a concrete relationship between the digital environment and the market expansion of nutraceutical products needs to be established in terms of revenue generation. Conclusively, we hypothesize that the recent evolution of the digital environment in the post-pandemic phase has boomed the nutraceutical industry in India. Following are the potential questions we intend to address.

2.11 Conclusion

Nutraceuticals have gained immense traction in the Indian market lately, especially technologically reformed Ayurvedic nutraceuticals that have intrigued consumers the most. However, there isn't enough literature available for guiding and setting up a framework for new start-ups. A huge gap can be noticed in the elucidation of digital marketing strategies of Ayurvedic nutraceuticals in India. It is immediately required to analyse the market and new-age digital marketing strategies for promoting ayurvedic start-ups in India. In this study, we will consider PlantBro Life Sciences Private Limited, Hisar, Haryana, 125001, India, as a reference brand and will elucidate its strategies for manufacturing, digital marketing, operations and logistics. Conclusively, with this data, we will frame a set of strategies that will be pivotal for other brands in a similar sector to thrive.

Chapter III:

METHODOLOGY

3.1 Framework of Digital Marketing

Considering digital touch points and various other tools, it is essential to propose a framework for effective digital marketing. However, the framework cannot be implemented until a thorough understanding of its elements is achieved. The study conducted by P K Kannan et al., 2017 presents a framework, but it's general and does not affiliate with a specific business domain. Our point of focus in this disclosure is Indian start-ups focusing on nutraceuticals and cosmetics prepared using ayurvedic and medicinal mushrooms. For a tailored digital marketing strategy, we require the respective study as a generalized reference model (P K Kannan *et al.*, 2017).

We considered Dr. P.K. Kannan's framework for framing our digital marketing strategies as it lays immense attention to storytelling and considers each aspect of consumer psychology. It was through this framework that we were able to identify our major collaborators to benefit the most from the digital environment. Social media played a crucial role, followed by two side markets. The frame also helped us understand consumer behaviour and know their expectations of the products. Further, search engines enabled us to know our actual standing in the market and helped us in boosting our brand website. We, as a company, attained gigantic data through these platforms, which helped us launch platforms that were specifically tailored for our audience.

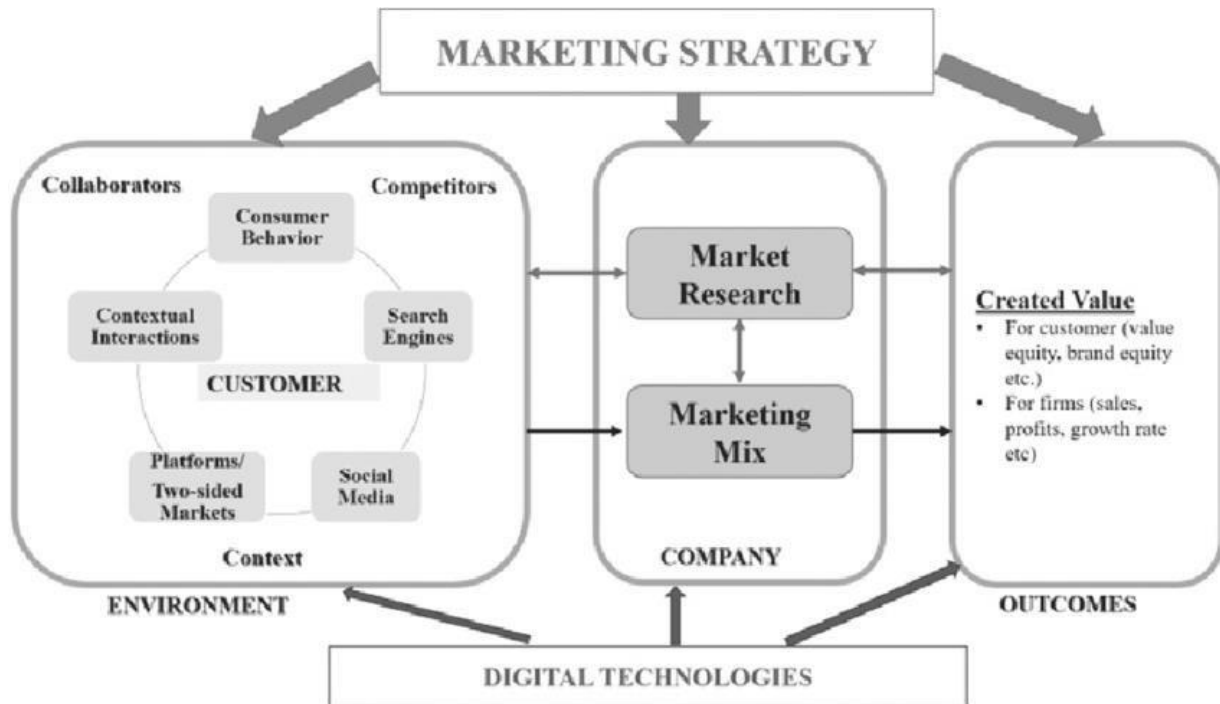


Figure 5: General framework of digital marketing strategy (P K Kannan *et al.*, 2017)

A standard marketing strategy covers five C's: customers, collaborators, competitors, context and company, and we are going to follow the same standardization but in the digital environment. These elements are mentioned in box 1 (from the left) of Figure 3; it is a circular system with customers considered as the central entity whilst competitors, context, and collaborators contribute to the working environment of the brand. The disclosure is to elucidate the role of digital technologies as an interface for the interaction of the five C's. Multiple concepts and structures resulting from this interaction are recorded and studied. For example, search engines, social media, user-created content, institutions and structures, concepts, and contextual interactions. The elucidation covers all constituents of a

marketing mix- product/service, price, place, and promotion. Furthermore, the data collected is interpreted to complement the digital marketing strategy overall. In this study, the role of digital technologies in molding the marketing strategy, accusation, and interpretation of the data for the company is studied (P K Kannan et al., 2017).

Furthermore, the outcome of the mentioned approaches using digital technologies is evaluated in terms of *value creation for consumers* (customer satisfaction, brand, relationship, and value equity), *customer value* (accusation, retention and profitability), and *firm value* (sales, profits and growth rate). Conclusively, the presented framework of strategies identifies touch points associated with marketing and simultaneously, the role of digital technologies as an interface for these actions is evaluated (P K Kannan et al., 2017).

The framework also identifies the shortcomings of digital technologies, which significantly affect the company's growth. The next section shines light on each of the elements of the framework (P K Kannan et al., 2017).

Fundamentals of the framework

The operating environment of the companies is largely affected by digital technologies (Box 1, Figure 1). Digital technologies limit the disparity in terms of information between the company and its consumers significantly. The changing consumer behaviour due to various digital technological interventions in both online and mobile contexts is critical. The framework elucidates the effects of changing customer behaviour in terms of profitability, customer relationship and data accusation concerning the company. Further, consumer-consumer interactions are highlighted on social media and User Generated

Content (UGC) word of mouth through ratings and reviews. Additionally, some platforms generate revenue by providing a marketplace for brands to sell their merchandise and connect with their audience (Rust et al., 2004). However, these two-sided markets (Amazon, Alibaba, Flipkart) are equally significant for consumers as they ensure the availability of all the products lying in a particular category. All in all, these platforms act as collaborators for better buying and selling experiences for companies and consumers, respectively (Rust et al., 2004). Similarly, companies must comply with the search for both collaborations and sales for customer accusations as it is a very competitive domain because all the competitors get a platform for interaction with the targeted audience. Lastly, the contextual interaction of digital technologies based on geography, privacy and safety, regulation and piracy in terms of marketing strategy (Rust et al., 2004). Digital technologies have immensely altered the concept of products for the company (Box 2 Figure 3) in three ways to provide novel value proposals for the customer. Firstly, binding the product (Box 2 Figure 3) with digital service, secondly, networking of products to filter out the least effective contender, and lastly, shaping products into digital services. These services allow the brand to provide a tailored experience for the consumer by amalgamating different value additional offers to attract consumers (Edleman and Singer, 2015). The amalgamation of value-added proposition raises pricing (Box 2 Figure 3) concern for the companies as they reduce the list prices of the products, but at the same time, they provide a chance for dynamic pricing and yield management. Furthermore, approaches like auctions of products, keyword searches, and price strategies have developed a distinguished market to which a company has to comply because the number of competitors

in the digital arena is limitless (Shankar et al., 2010). However, these strategies keep the brands on their toes, which is cumulatively beneficial for both brands and consumers because they always have exceptional value to provide their consumers with (Shankar et al., 2010).

Digital technologies have drastically evolved modes of communication, traditional approaches like radio, print, and television have been completely taken over by modern-day interventions such as social media, E-mail, UGC, search engines, etc. (Xu et al., 2016).

These technologies have increased the reach of brand manifolds compared to traditional methods and positively affected the promotion of products/services (Rust et al., 2004)

New marketing techniques, such as location-based and personalized promotions, are currently being widely used to promote specific products and services and provide consumers with detailed insights into them (Edleman and Singer, 2015). Moreover, multifarious channels have developed over time, which complement digital promotion by adding value to customer accusations and aiding the buying experience of the consumer. For example, e-mail marketing is a tailor-made mode of promotion that uses e-mail technology as a channel and is specifically delivered to a designated audience (Rust et al., 2004)

The digital technologies discussed above can be assessed at multiple levels concerning outcomes (Box 3 Figure 1) for a company- value for the consumer value for the company (Edleman and Singer, 2015). The outcomes are purely based on the strategic steps a company takes by utilising the existing digital technologies and creating value for customers and the company itself. Figure 1 clearly points towards the potency of tactical

actions taken by a firm utilizing digital technologies for accomplishing various touch points for marketing.

Marketing research (Box 4 Figure 1) involves obtaining and analysing the data generated by the utilization of digital technologies to attain a deeper insight into the operating environment, actions and outcomes and accordingly improvising the current digital marketing strategies of the company. For example, the internet surfing behaviour of the consumers can be pinpointed on a computer versus when they surf on a mobile handset. Further, how consumers perceive a brand can be anticipated by studying their interaction with reviews, ratings and digital word-of-mouth publicity of a brand's merchandise (P K Kannan *et al.*, 2017). Thus, marketing research plays a pivotal role in designing a brand's digital marketing strategy, which is highly dynamic.

Conclusively, through Dr. P.K. Kannan's framework, we idealized the approaches for influencing our target audiences using different social media platforms, search engines and two-sided markets. The deep insights into each of these are present in the results section, wherein we talk about different strategies used in each of these domains.

3.2 Overview of the Research Problem

The Indian economy has seen a sharp increase in the number of start-ups in the past decade, and the ecosystem around these start-ups is highly dynamic. Additionally, the gap between new-age products and consumer awareness is huge. The average consumer in India is devoid of pivotal information for making a successful buy. No, the brands don't want to provide the information, but the consumer demands and expectations have not been precisely evaluated by

the brands in India because of the time factor. In this study, we considered PlantBro Life Sciences Private Limited, 2021, India, as our primary reference to study the digital marketing environment of an Indian nutraceutical-based startup. We recorded the follower base, sales, return on ad spend (ROAS), and conversion rate for social media platforms like Facebook and Instagram. A concise study of strategies used on E-commerce platforms like Amazon and Flipkart is also presented. The Idea here was to avail a roadmap for emerging startups to fill in the gaps and pitfalls in the digital domain in terms of revenue and spend.

Furthermore, we intend to explore the grey area of consumer expectations and demands because unless and until a startup knows what its consumer wants, it cannot deliver. We will also be elucidating different strategies followed by a startup on various digital media platforms to boost their visibility and sales. Mushroom-based nutraceuticals are comparatively newer for the Indian market and are required to be studied in detail; we will survey the audience, specifically the younger audience and record their interest in mushroom-based nutraceuticals. Moreover, there have been numerous interventions in the industry that have transformed the conventional face of nutraceuticals. Nano-formulations, strips, and nano-extracts, it is significant to record the response of the audience for these innovations to completely understand the changing game of nutraceuticals in India.

Conclusively, we would lay a strategy for a startup in the nutraceutical domain for social media platforms and digital marketplaces to make brands more visible and viable. Further, we would analyse the Indian nutraceutical market concerning technical innovations in nutraceuticals. Mushroom-based dietary supplements are a new thing for the Indian market, so we would also try to get deep insight into their market traction.

3.2 Operationalization of Theoretical Constructs

PlantBro Life Sciences Private Limited, 2021, India, is a startup working on interdisciplinary lines of Ayurvedic nano-formulation design, mycology and organic agriculture. PlantBro Life Sciences grows its raw materials, i.e., medicinal herbs, using ancient farming practices called Vedic agriculture. Further, it cultivates a medicinal mushroom called cordyceps militaris in its state-of-the-art laboratory in vitro. Finally, it processes and formulates nutraceuticals to work on defined ailments and abilities. It specifically focuses on nanotechnology-based techniques to prepare formulations. In this research, we intend to conceptualize different strategies followed by PlantBro Life Sciences in terms of marketing, branding, brand building, and operations. Further, we will study the response of Indian consumers towards novel fungi and nanotechnology-based functional foods. Lastly, a comparison of traditional business models and current digitally sound models will be presented for the nutraceutical market of India.

3.2.1 Production of Raw Materials

PlantBro Life Sciences is our raw material-producing startup, meaning instead of outsourcing manufacturing precursors, we grow them on our farm using primitive, Vedic and simple agricultural techniques. At PlantBro Farm, which is a subsidiary of PlantBro Life Sciences, we grow different medicinal herbs, which are further used for finished product manufacturing. Agriculture is the world's most widely practised profession, and the techniques, climate, soil type, relative humidity, and precipitation are some factors that differentiate farmers of different continents. In India, we are lucky to have all climatic zones ranging from tropical deserts to snowy foothills of the Himalayan.

Regional specific.

Further, India being a peninsula, it becomes easier for us to raise tropical and moderate climate favouring crops throughout the year. PlantBro farm is heavenly blessed to be located in the central region of India, where we enjoy all the seasons to the fullest, at our farm, we have a full four-month monsoon followed by a bone-chilling winter with dropping temperatures to zero degrees centigrade, of course not as cold as the Europe or North American regions. Next, we have a hot summer wherein the temperatures rise to forty-five degrees centigrade. In this way, we are allowed to grow different types of herbs, especially spices, in different seasons of the year. This climatic range also allows us to grow different herbs in the same fields as an intercropping system.

We at PlantBro Farm majorly grow Ayurvedic herbs like safed musli, turmeric, white turmeric and ashwagandha. The cultivation of these crops is carried out at varied time points of the year, and the practices followed for cultivation are quite different from each other. However, we keep in mind that no mineral or chemical fertilizers are pumped into our crops to maintain the organic quality and integrity.

Herbs Cultivation for Nutraceuticals

PlantBro Life Sciences is into growing different herbs for manufacturing various nutraceutical products like Ayurvedic juices from Bitter gourd bottle gourd for diabetes and hypertension, respectively. Different herbs like turmeric, safed musli, black musli and ashwagandha are also grown simultaneously. However, the basic practices for growing these herbs are more or less similar following are some common steps followed for cultivation on PlantBro farm.

Land Preparation: crops, regardless of the family and species, require thorough land preparation. The steps include ploughing the field twice using a reversible plough (Figure 5). Next is cultivating it using a fourteen-teeth cultivator (Figure 6). Further, it is harrowing, which involves sharp discs that are run over the soil for further thinning and powdering (Figure 6). Once the soil is finely powdered and levelled, we use a rotavator to give the soil a final finish so it can be easily transformed into raised beds (Figure 7). The final step in land preparation is raised bed formation, in which razor-shaped equipment is used to partition the soil and form structures that appear to be beds that are at a designated distance from each other (Figure 9). These raised beds are further used for transplantation of saplings, and at times, we directly seed in these beds depending on the crop (**Figure 9**).



Figure 7



Figure 8



Figure 9



Figure 10



Figure 11

Plastic mulching: Post transplantation, it is significant to control weed growth around the plants for anticipated yield. To address the issue, we use a plastic mulch Figure 10. The mulch covers the raised bed from all sides like a blanket to prevent weed growth and better utilisation of organic fertilisers and irrigation.

Transplantation of Saplings: The saplings of a particular crop are prepared in a protected structure addressed as a playhouse. On average, we plant eight thousand plants per acre of

land. Transplantation is a process in which a hole is made at a foot distance in a straight row on a raised bed, and each sapling is planted in this hole, as shown in Figure 11.

Fertigation and Irrigation Schedule: Herbs require a higher concentration of nitrogen, for which we use cow urine and cow dung formulated together in the form of “jeevamrit”. Fruits, lastly, require very high calcium and boron, so we bury fish waste around the plants to ensure ample calcium and boron.

Integrated Pest Management (IPM): This is an integral part of agriculture, be it organic or conventional. On our farm, we ensure completely organic pest management using different techniques mentioned in Vedas, religious ancient Hindu texts. For IPM, we strictly use good agricultural practices that have been accepted worldwide to ensure fruit and raw material quality.

Manual Labor Management: At PlantBro Farm, we employ more than forty daily wagers a day on average for harvesting, mulching, staking, etc. We employ tribal populations from more than five villages around us, generating employment for more than five thousand to ten thousand daily wagers per year.

3.2.2 Harvesting and Processing of Raw Materials: Post completion of crop time, each crop is harvested at different time intervals using multiple techniques. Crops are directly plucked and graded for dehydration and directly sent for nanoparticle preparations.

Ayurvedic herbs are the hardest ones because there are multiple steps involved in their harvesting and processing. Following are some steps taken for processing herbs at our farm.

Harvesting : We at PlantBro Farm mostly cultivate Yellow & White Turmeric and Safed Musli for our nanotechnological preparations. Harvesting is a tedious procedure, and due to the lack of sophisticated equipment, it is also expensive as everything is done manually.

Cleaning: Post harvesting, the piles of turmeric and safed musli are cleansed using water, and the dirt is wiped off. Next, the tubers are graded in terms of size, shape and variety and finally sent for peeling. The herbs are peeled before being sent for drying; each tuber is minutely peeled so there is no outer shell because it could prove to be toxic if consumed.

Drying: One of the most critical steps in the processing of herbs as it requires precision in terms of temperature because the active ingredients of the herbs are thermo-sensitive.

3.2.3 Cordyceps Militaris Cultivation and Processing

Cordyceps militaris is a medicinal mushroom that is entomopathogenic (growing on insects), an ascomycete and bipolar heterothallic. Recently, *C. militaris* has gained immense attention amongst molecular and cancer biologists due to its health benefits. As per a study, *C. militaris* showed anti-angiogenic properties, complementing cancer treatment. Adding to it, there are enormous other health benefits such as pro-sexual, anti-inflammatory, anti-oxidant/ anti-aging, anti-tumour/anti-cancer/anti-leukemic, anti-proliferative, anti-metastatic, immunomodulatory, anti-microbial, anti-bacterial, anti-viral, anti-fungal, anti-protozoal, insecticidal, larvicidal, anti-fibrotic, steroidogenic, hypoglycemic, hypolipidaemic, anti-angiogenetic, anti-diabetic, anti-HIV, anti-malarial, anti-fatigue, neuroprotective, liver-protective, reno-protective as well as pneumo-protective, let alone their other synergistic activities, which let it be marketable in the western countries as over-the-counter medicine.

In vitro, cultivation of *C. militaris* is a tedious and technical venture but is highly rewarding as the biometabolites produced by the mushroom are of profound commercial importance. There are various culturing techniques for cultivating *C. militaris* in a laboratory, such as the liquid-culture method, solid-liquid culture, and static culture. Nonetheless, the static culture method is dominantly practised in India. However, the culturing technique we opt for depends on the nature of the desired product. In the current project, we intend to practice liquid-static culture in hi-tech bioreactors for the direct production of cordycepin, which is the most valued bio-metabolite, along with the static substrate method. As per our best knowledge, no other small- or large-scale laboratory in India is into such practice.

Conventionally, labs in India grow fruiting bodies of mushrooms in jars in a controlled lab setting, which is mere raw material for finished products. Adding to it, most commercially available Cordyceps products are crude extracts. Our present facility at PlantBro Life Sciences is also engaged in the production of fruiting bodies on solid substrate media. However, due to changing trends in the global market, it is important to improvise and adapt to newer techniques. In a study, they recorded 1400mg/L cordycepin and claimed liquid- the static culture method to be perfectly viable. Furthermore, in our facility, we have standardised a protocol for maximum cordycepin production of around 2000 mg/L, we have also listed our protocol for a patent, which is under process under the Indian Patent Authority.

C. militaris cultivation is highly tedious and technical. Initially, we prepare mother cultures from either commercially prepared cultures or natural sources. In India, naturally occurring *C. militaris* is found seldomly thus, most labs cultivate already sub-cultured strains. Post

mother culture preparation, liquid culture is prepared using a respective media and agitated for seven days at 22⁰ C in an incubator shaker. Further, glass jars/food-grade plastic containers are sterilised at 121C and 15 psi for 2 hours and cooled in a laminar airflow cabinet. Followed by inoculation of a respective volume of liquid seed culture into glass jars. Next, the glass jars are kept in a dark room for seven days for mycelium growth. Followed by light exposure for 12 hours/day for the next 20 days at 22C in a clean grow room installed with air conditioners, HEPA filters, and exhausts. There are different combinations of light for optimum growth of the fruiting bodies.

However, in India, most labs use commercial tube lights. For the final 40 days of growth, the glass jars are exposed to light for 24 hours. Post completion of 60 days, the fruiting bodies are harvested. The post-harvest processing of *C. militaris* is pivotal for achieving anticipated cordycepin levels for superior quality nutraceuticals. At PlantBro's facility, we cold dry the harvested cordyceps at -125 degrees centigrade to freeze the moisture without degrading the active metabolites. However, all other facilities use heat drying, which leads to the degradation of active metabolites and produces low-quality cordyceps, Figure 12.

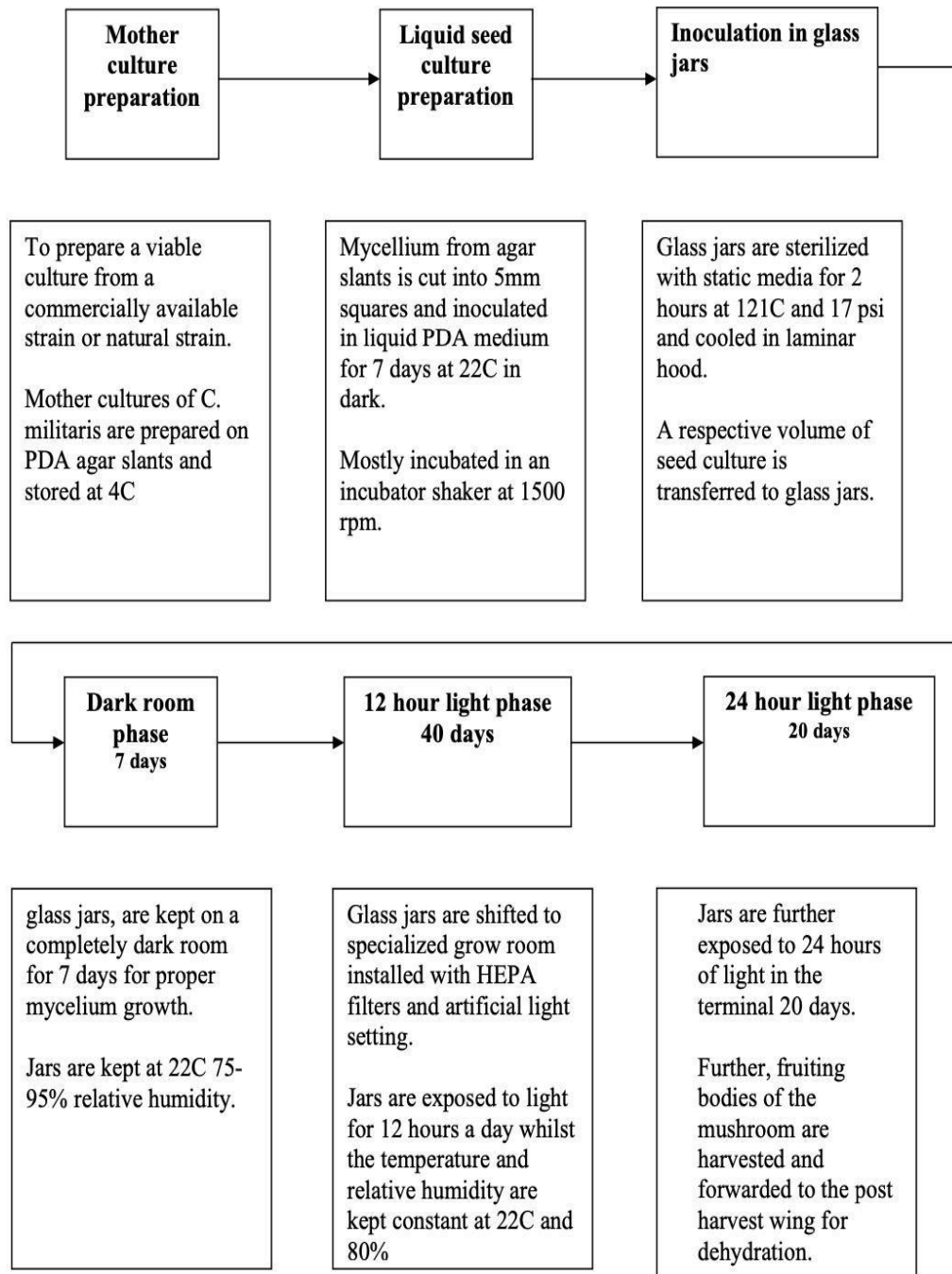


Figure 12 : Growth cycle of *C. militaris* mushroom in controlled environment

Following are some images from PlantBro's Cordyceps Cultivation Facility



Figure 13 : Preparation room, where the liquid seed culture and glass jars for liquid culture and inoculation are prepared respectively.



Figure 14 : Inoculation Room is the heart & Soul of the process where liquid culture is transferred to glass jars for cultivation of Cordyceps Militaris. Absolute sterility is maintained in this area for definite results.



Figure 15 : Grow Room is where the most critical stage of cordyceps happens, which formation of the fruiting body which is our merchandise. It's a centrally cooled facility which maintains 22C. The cycle is 60 days long.

3.2.4 Product Manufacturing and Formulations

Our formulation and manufacturing team at PlantBro has worked tirelessly to develop one-of-a-kind nano-powders using medicinal mushrooms like Cordyceps and Ganoderma. Alongside, we processed ayurvedic herbs like Turmeric and Safed Musli into nanoparticles for efficient infusion with mushrooms. Initially, we worked on three diverse types of formulations: Capsules, Powders, and Raw herbs. Concerning our target audience, we considered these formulations as some people feel sick when they pop a capsule or feel artificial drinking a smoothie or a concoction of nano-powders. Whilst there's a major share who want to spare themselves from the inconvenience of making a smoothie or a green tea, we developed capsules. Thus, we refrained our products from any kind of psychological pressure asserted by the audience and did not want our products to be neglected or rejected just because of the formulation we were offering.

Primarily, our formulation team stressed encircling ayurvedic herbs and medicinal mushrooms, which could address ailments that are often noticed in society. PlantBro's products majorly target Sexual Health, Hypertension, Diabetes, Immunity and Energy. The product array is well-defined, and each product addresses a specific ailment mentioned above. The following are our products with detailed insight into manufacturing and benefits.

Cordymune: is a vegetarian capsule of 100% nano-powdered fruiting bodies of cordyceps militaris. They are an exquisite source of antioxidants, anti-ageing and DNA-repairing bioactive agents. Cordymunes also ensure strong immune support and sexual health to

reinvigorate the general well-being of the user. This product is non-GMO, vegetarian and cruelty-free Figure 16.

Product benefits:

- DNA repair: Helps recover from environmental stress and cellular mutations
- Anti-ageing: Improves skin health and prevents wrinkling of the skin
- Regulates blood flow and blood sugar, and maintains the right physiological levels
- Helps in recovery against COVID by building muscle mass and strengthening immunity
- Regulates sexual health: Improves blood flow and testosterone secretion
- Cytokine regulation: Immunomodulation and immunity boosting characteristics
- Helps in brain, liver, and kidney functions: Maintains homeostasis of the body
- Relief from asthma: Strengthens immunity and gives relief from allergies
- Adaptogens: Secondary metabolites from Ayurvedic herbs

Muslivia: is a novel formulation consisting of Safed musli nano extracts blended with Korean ginseng roots. These extracts are a high-potency nano formation that not only enhances energy levels but also augments libido, improves sperm count and helps with fertility issues. It also ensures more muscle mass, improved testosterone levels and increased stamina to bolster the sexual health of the user. This product is non-GMO, vegetarian and cruelty-free, Figure 17.

Product benefits:

- Helps fertility: by triggering a hormonal response for higher testosterone secretion in males
- Enhances libido: Increased energy levels stimulate higher sex drives in males
- Improves testosterone levels: Improved humoral responses provide overall higher testosterone levels
- Increases muscle mass: Higher testosterone leads to higher muscle mass
- Enhances energy levels: ATP regulation is boosted, triggering higher energy
- Improves stamina: Higher energy and libido increases stamina
- Increases sperm count: higher testosterone leads to improved sperm health
- Regulates sexual health: all the factors listed above

Turcuma: is a novel formulation that consists of 95% nano curcuminoids turmeric root and is complimented by black pepper extracts. They are highly bio-available and are an exquisite source of antioxidants and anti-ageing bioactive agents. This turmeric Nano-extract also ensures strong immune support, strengthens insulin regulation and eases fatigue to reinvigorate the general well-being of the user. This product is non-GMO, vegetarian and cruelty-free,

Product benefits:

Stress-Relieving Adaptogens: Secondary metabolites ease cortisol production and relieve stress

Strengthens immune response provides immunity against allergies

Anti-ageing: prevents wrinkling of the skin

Helps in brain, liver, and kidney functions: Maintains homeostasis

Relief from asthma, bronchitis, and workout fatigue by immune modulation

CordyCure: Cordycure is a powdered mixture of Cordyceps, Nano-Yellow Turmeric Extract and Black Pepper Extract with effective anti-inflammatory properties. They are an exquisite source of antioxidants, anti-ageing and DNA-repairing bioactive agents. Cordycure also ensures strong immune support and smooth blood circulation to reinvigorate the general well-being of the user. This product is non-GMO, vegetarian and cruelty-free, Figure 19.

Product benefits:

- Helps arthritis: Nanoparticles act on joint inflammation locally and target specific sites
- DNA repair Helps recover from environmental stress and cellular mutations
- Anti-ageing: Improves skin health and prevents wrinkling of the skin
- Regulates blood flow and blood sugar: maintains the right physiological levels
- Helps in recovery against COVID by building muscle mass and strengthening immunity
- Regulates sexual health: Improves blood flow and testosterone secretion
- Cytokine regulation: Immunomodulation and immunity boosting characteristics
- Helps in brain, liver, and kidney functions: Maintains homeostasis of the body
- Relief from asthma: Strengthens immunity and gives relief from allergies
- Adaptogens: Secondary metabolites from Ayurvedic herbs

CordyMuse: is a powdered mixture of Cordyceps and Nano-Safed Musli Extract. These free radical scavengers contain phytometabolites that help in maintaining stress levels. They are also an exquisite source of anti-aging and DNA-repairing bioactive agents. Cordymuse also ensures aid with infertility issues and regulates sexual health to reinvigorate the general well-being of the user. This product is non-GMO, vegetarian and cruelty-free, Figure 20.

Product benefits:

- DNA repair: Helps recover from environmental stress and cellular mutations
- Infertility issues: Improves humoral responses of both men and women, resulting in higher fertility
- Anti-ageing: Anti-ageing: Improves skin health and prevents wrinkling of the skin
- Endurance: Elevated testosterone levels lead to higher endurance
- Regulates blood flow and blood sugar and maintains physiological balance
- Helps in recovery against COVID: Boosted immunity and mitigated allergies
- Regulates sexual health: Increased secretion of sexual hormones in all genders
- Cytokine regulation: improved Immunity
- Helps in brain, liver, and kidney functions: better homeostasis
- Adaptogens: Increased body resistance towards pathogens and allergies

CordyFruit: CordyFruits are 100% raw dried fruiting bodies of cordyceps militaris. They contain high cordycepin value but no fillers or mycelium. They are an exquisite source of antioxidants, anti-ageing and DNA-repairing bioactive agents. CordyFruits also ensures strong immune support and sexual health to reinvigorate the general well-being of the user. This product is non-GMO, vegetarian and cruelty-free, Figure 21.

Product benefits:

- DNA repair: Helps recover from environmental stress and cellular mutations
- Anti-ageing: Improves skin health and prevents wrinkling of the skin
- Regulates blood flow and blood sugar: maintains the right physiological levels
- Helps in recovery against COVID by building muscle mass and strengthening immunity
- Regulates sexual health: Improves blood flow and testosterone secretion
- Cytokine regulation: Immunomodulation and immunity boosting characteristics
- Helps in brain, liver, and kidney functions: Maintains homeostasis of the body
- Relief from asthma: Strengthens immunity and gives relief from allergies
- Adaptogens: Secondary metabolites from Ayurvedic herbs

CordyTea: CordyTea is a powdered mixture of C and herbal tea. It contains phytometabolites, which provide rejuvenation and endurance. They are also an exquisite source of antioxidants, anti-ageing and DNA-repairing bioactive agents. CordyTeas also ensure strong immune support and sexual health to reinvigorate the general well-being of the user. This product is non-GMO, vegetarian and cruelty-free, Figure 22
Product benefits:

- DNA repair: Fights cellular mutation
- Anti-ageing: Prevents wrinkles
- Improves fertility: Improves reproductive hormone secretion
- Helps with fatigue: Reduces cortisol levels
- Regulates blood flow and blood sugar: Better homeostasis
- Helps in recovery against COVID: Stronger Immunity
- Regulates sexual health Higher secretion of reproductive hormones



Figure 16: Cordymune



Figure 17: Muslivia



Figure 18 : Turcuma



Figure 19 : Cordycure



Figure 20: CordyMuse



Figure 21: CordyFruit



Figure 15, 16, 17, 18, 19, 20, 21, 22: Product Portfolio of PlantBro

3.3 Digital Marketing Strategies of PlantBro Life Sciences

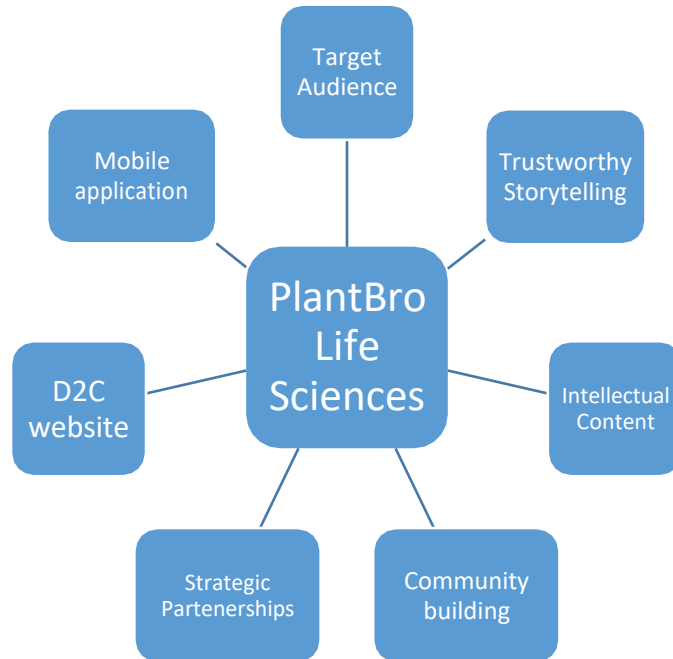


Figure 23 : Digital Marketing Portfolio of PlantBro Life Sciences

The nutraceutical industry is highly dynamic in terms of product design, content and marketing strategies. The aware audience constantly looks for novel products that can better suit their interests. Following are some prevalent strategies which were opted by PlantBro Life Sciences for upscaling its business endeavors (Figure 23).

Target Audience

This aspect sounds very convenient to achieve, but most of the brands fail to filter out their target customers. PlantBro focused on both demographics and psychographics through which they were able to map their audiences geographically and understand the fears, goals, aspirations, and pursuits of their audiences, respectively. Nutraceuticals have been noticed to be sold based on the emotional quotient of a brand (Lujan, E., 2023). Thus, it was crucial for PlantBro Life Sciences to first identify its audience as Generation X and Z it was crucial to connect with them through relative content like influencer videos, product benefit videos, educational content, fitness related content.

Trustworthy Storytelling

The buyers in the industry are divided into three classes: upper, middle, and lower. Upper and middle-class buyers are excessively particular about the traceability of the product (Team., 2021). It was primitive for PlantBro to narrate their story in a way that makes their merchandise look the most natural in the room. It was crucial to showcase the product manufacturing process and describe comprehensively the source and quality of the raw material. In India particularly, the audiences connect tremendously well with stories showcasing farming of the raw materials, which we consolidated upon profiting from this strategy. PlantBro is a self-sustaining start-up as it grows its raw materials. Thus, it was convenient for us to showcase our daily farm practices to lure the audience and gain their trust.

Community building

Long-term loyalty and relationships drive a nutraceutical brand away from all ripples; it has been proved worldwide by brands like Amway, now nutraceuticals globally and Dabur, Himalaya, Zandu, Patanjali Ayurveda in India. PlantBro Life Sciences found it obligatory to highlight its naturality and connect with like-minded audiences. Digital connection and promotion through strategies like word of mouth are equally important, especially in India, where social decisions are of utmost significance (Badich, S., 2023). Social media platforms are silver bullets for building a community, a regular interactive post or an indulging carousel uplifted PlantBro's position in between its community drastically. Building a community took time and was equally rewarding for us, as we were able to better target our audience, and, at the same time, we could connect with them through post comments to know what they expect from us. Our social media accounts on Instagram, Facebook and YouTube kept getting continuous traction, and within no time, we were at 4500 and 20,000 followers, respectively. India, being a country with numerous natural healing systems, community building helped greatly and benefited PlantBro in both sharing its vision and selling its merchandise.

Intellectual Content

The upper-class buyers focus completely on the naturality and benefits of the nutraceutical. It became mandatory for us to spread the word about the origins of our raw material and natural processing methodologies, leading to deepening the trust of upper-class consumers in our products. The most appropriate approach was through Instagram, wherein daily posts about farm activities of seeding, managing, and harvesting crops were showcased, bringing

us immense attention from the upper class. The primary reason for the huge success of this strategy was the absence of farming-based experiences in the upper class, as most of the people reside in concrete jungles. However, the format of the post should be in convergence with the nature of the audience. For instance, some people connect more with farming and country life-related content showing the origins and some with processing and benefits of the product. The brand needs to be vastly careful about what it wants to send as a message to make a better connection (Pionalmere, T., 2022). PlantBro benefited immensely through posting raw organic intellectual content related to farming. The audiences instantly connected with feelings of trust in the brand. Taking PlantBro's Instagram into consideration, we can clearly say that the post related to farming and natural living booted our brand value exponentially.

Strategic Partnerships

No domain of business can sustain itself solitarily, the wellness industry is no different and needs partners for expansion of business. A wellness brand is required to build partnerships with professionals who advocate a natural way of living and alternative medicine systems to thrive. For example, an Ayurvedic doctor with a legitimate degree in practising Ayurvedic medicine can be an asset because his recommendations will be apex for the user. Additionally, a person who deeply believes in Ayurveda will surely consult a professional because the formulations are complex and elaborate. In such a scenery, the opinion of an Ayurvedic professional will be considered concretely. Similarly, a gym or yoga trainer, chiropractor, or nutritionist can contribute to brands' popularity in their respective areas.

Indian market coincides with this strategy because people tend to have an ayurvedic consultant, if not a doctor, for their everyday ailments (Lujan, E., 2023). In the case of PlantBro, we connected with renowned ayurvedic doctors, dieticians, and personal trainers to spread word-of-mouth publicity of the brand. This strategy has worked greatly for us we were able to attract a humungous number of clients through this.

D2C (Direct-to-Consumer) Website

For a health and wellness brand to expand, its digital presence is critical, increasing sales through renowned e-commerce stores is indeed the first step, but promoting its website is equally important, especially in India, where the target audience is the middle and higher class who are adequately educated and technophilic. It is required for a website to be mobile-friendly, and the home page should send a clear message about the brand's vision and mission to the audience. An 'About Us' page is essential for sharing the brand's story, challenges, and key partners, creating a meaningful connection with the audience. The About Us page also helps in building trust in the brand if real faces are depicted with their actual roles in the company. The products page is the showstopper for a D2C website because that's where conversion occurs. It is necessary to design the page in a way that provides maximum information with minimum content. The product descriptions need to be concise yet explanatory. Clear instructions for use and detailed pricing must be provided, ensuring full transparency with no hidden costs associated with the products. Lastly, the checkout page wherein the consumer should not face any difficulty in processing the transaction, the banking partner should be renowned and should provide

complete protection of the consumer's banking details. All these points cover the website of a wellness brand can become its strongest asset and generate higher revenue than e-commerce platforms because there are no commissions (Lyons, J., 2023).

The PlantBro brand website is built on the Shopify platform and is designed to offer consumers comprehensive insights into the products of interest. We specifically uploaded the laboratory test results of our products to gain the trust of our audiences. Additionally, we keep our pricing comparatively lower as compared to e-commerce marketplaces like Amazon and Flipkart to encourage our audience to buy directly from the website. Further, we used Google ads and sponsored marketing and the traffic from these ads was navigated directly.

Mobile Application

The D2C website is central for a brand, but if the popularity quotient has increased, it is recommended to develop a mobile application. It connects the recurring buyer better with the brand and builds trust in its products. Most nutraceutical buyers in India use an Android or an Apple device, so it's advisable to create an application functional on both user interfaces. The appropriate strategy for an application is to let the user set up an account using their e-mail or contact number through which they can access all their activity on the application. It will also allow the company to keep their buyers notified about new products. Special offers on weekends or festivals can also help increase a brand's traction through mobile applications. Indian consumers love to bargain, and if they are availed of a chance to buy a product for a lower price, they instantly consider it, leading to higher

conversions. Periodic giveaways should be planned for special occasions like Christmas, Diwali, and New Year to gain higher attention and build relations with the consumers. A mobile application can be instrumental for such offers as it is handier than a website, and offers can be better illustrated (Xaif, L., 2022). In the case of PlantBro life sciences, we are currently working on developing a mobile application for making our consumer journey convenient and playful. Alongside, PlantBro planned periodic giveaways and discount streaks to keep our audiences engaged.

3.4 Social media Metrics and their significance for PlantBro

The digital marketing strategies of PlantBro are thoroughly discussed in the section above, which details the impact of each strategy on social media. Herein, we present the metrics of social media, which are parameters for measuring the success of a campaign on social media. A campaign is an activity that we initiate on social media that runs in a loop to fulfil different agendas like branding, sales, customer accusation and gaining traction in the form of followers. Following are key social media metrics.

Social media Engagement Metrics

These parameters specify the growth of a brand in terms of likes, comments, and shares. It shows how many people were engaged with your post or account.

- a. Average engagement rate: the total number of interactions on content relative to the total number of followers. $\text{Total engagement}/\text{total followers} * 100 = \text{Engagement rate}$. It is very important in the long run to anticipate the success of content or an account.
- b. Virality rate: the term has been taken from viral. It signifies the spreading of your content over social media and is crucial for calculating engagement metrics. It is dependent on shares. $\text{Number of shares}/\text{number of impressions} * 100 = \text{Virality rate}$ (Sadhu, 2024).

Social media growth metrics

The growth of our brand is the primary agenda for which we use social media as a tool for calculating the growth over social media. The following are the key metrics.

- a. Followers gain: shows the total number of new people who want to associate with your content and want to see regular updates, it's directly proportionated with a brands success on social media.
- b. Follower growth rate: the total follower gains over a specific period in the form of a percentage. $\text{New followers}/\text{total followers at point zero} * 100$ (Sadhu, 2024).

Social media awareness metrics

These are the parameters which shine light on the success of a campaign in terms of public applause. Meaning how many people it reached, how many of them liked it, the number of times it was shown on the platforms, how many times it was viewed, and brand mentions through the post.

- a. Reach: a specific number of people who see a particular post, it can be addressed as the advanced version of impressions. It's important to segregate the number of followers and non-followers watching a post.
- b. Video Views: The number of times a video has been viewed on a platform gives an idea of the campaign's success to the creators and marketers in terms of the popularity of a brand or a product.
- c. Brand mentions: this metric is crucial for analysing the popularity quotient of a brand because this is a measure of the occurrence of a brand's name in third-party posts (Sadhu, 2024).

Social media advertising metrics

Social media advertising is crucial, but measuring it right is even more critical, there is a set of metrics that allow a brand to measure its social media performance and are addressed as Key Performance Indicators (KPIs). The following are the KPIs we considered in this research.

- a. Click-through rates (CTR): the measure of clicks on the call to action on a particular social media post. It gives a specific count of people who were directed to a desired website, landing page, or Shopify store through a social media post. CTR can be calculated as

$$\text{Number of clicks/number of impressions} * 100 = \text{CTR}$$

- b. Cost per click (CPC): as the name suggests, is the cost a brand bears in making one call to action click on a social media post. This means that if a brand shares one post and spends a hundred Indian rupees for its promotion as ad spend and gets ten clicks, which leads the

consumer to their website, then the cost per click is 10 Indian rupees. $\text{Total ad spend} / \text{Total number of clicks} * 100 = \text{CPC}$.

c. Conversion rate: this is the key metric for measuring the revenue a social media page has generated. It reveals the exact number of people who clicked on the call-to-action link amongst all visitors. Maximum brands consider conversion rate as the primary metric to anticipate a brand's social media presence. Different actions are considered in conversion rate, like clicking on the website link, subscribing to a news teller, and registering for an event through e-mail. $\text{Conversions} / \text{total clicks} * 100 = \text{Conversion rate}$

d. Return on Ad spend (ROAS): is a measure of the revenue generated through total ad spend. It's specific and gives an exact number for every Indian rupee spent on advertisements. ROAS can be calculated by dividing total ad spend by total revenue. In our research, we have given ROAS the utmost importance in calculating our social media successes (Sadhu, 2024).

Social media customer service metrics

Once a customer has responded to a brand's post, the ball comes into the brand's court and it's their turn to revert to the consumer. These metrics are a measure of a company's ability to be responsive to its clients for their complaints, questions, doubts, events, and meetings.

a. Average response time: the average time taken by a brand to respond to a client's queries.

Like, if there are two queries and a brand has taken an hour to respond to them, then the average response time is 30 minutes (Sadhu, 2024).

b. Customer satisfaction score (CSAT): This is a score awarded to a company after they have addressed a consumer query. It can be calculated by doing surveys amongst the consumers who have gotten their queries solved. For example, ten people got their queries solved five of them gave a score of 10/10 and five gave a score of 5/10 then, as an average, the CSAT will be 7.5 (Sadhu, 2024).

Criterion of Success: In this analysis, we used Facebook and Instagram as our key platforms for comparison of social media strategies. We considered followers gain, revenue generated, return on ad spend (ROAS) and conversion rates as our metrics. The higher the number of followers, sales, ROAS and conversion rates, the better it is, but for threshold 2K followers and sales achieving break even, ROAS of 1.5 and 20% conversion rates as success.

3.5 Research Questions

Indian start-up ecosystem has been booming since the last decade, nurturing start-ups from all domains. However, Ayurvedic or general wellness start-ups have seen a sharp increase after the pandemic; COVID-19. In this study, we are going to record, interpret, and discuss multifarious strategies followed by one such Ayurveda and wellness-associated start-up, PlantBro Life Sciences. Indian audiences are tricky to convince, they might not be the most educated ones but are naturally gifted with common sense and know when they are being distracted from their original want or need. Several start-ups with phenomenal products couldn't make it in India because they failed to make their audiences believe that the problem

had been solved. This is, in fact, one of the most critical bottlenecks for start-ups today, gaining the faith of their customers.

India has witnessed a whole new horizon of wellness start-ups ranging from dietary supplements to vitamins to proteins to ayurvedic herbs to medicinal mushrooms. However, due to the revision of rules by the regulating authorities like FSSAI (Food Safety Standards Authority of India) and AYUSH (Ayurveda, Yoga, Unnani, Sidha and Homeopathy Ministry of India) the sourcing of raw materials has become highly challenging. Further, the types of formulations sold in the Indian wellness market were conventional and outdated, but the rising numbers of start-ups have completely reformed the formulation types.

Nowadays, we often see nano and amalgamated nutraceuticals in the Indian market. Furthermore, the Indian consumer, after the pandemic, has realised the importance of good quality nutraceuticals because they are a source of nutrition that cannot be fulfilled by a regular diet. It has become inevitable for the masses to avoid nutraceuticals because of lifestyle and environmental stress. Thus, if we mandatorily have to pop a pill, we make sure that it comes from the best possible source because it's going to affect our health and well-being.

It is pivotal for an- age start-up in India to be researched and updated to present-day norms in all senses because of the cutthroat competition. The markets here are not forgiving because of their size and availability of products. Slight negligence in product quality, pricing, and marketing and the consumers immediately opt on to the other brand selling the very same product at a lower price, etc. However, there are brands in India with immense customer loyalty, but it comes with time, price competitiveness and fast-moving products. The

nutraceutical domain in India has always been an underdog because of the vast prevalence of molecular medicines. Moreover, the number of doctors practicing Ayurveda in India is smaller than the once practicing modern medicine. The higher percentage of allopathic doctors in India led to a firmer belief of patients in modern molecular medicines. However, the post-pandemic scenario has changed interestingly, as now Gen X and Gen Z have shown rising interest in Ayurveda and general wellness products.

The founders of PlantBro Life Sciences were academically trained in the formulation of nano-based products and capitalised on the growing demand for new-age nutraceuticals in India. PlantBro Life Sciences is one of the first brands to launch medicinal mushrooms-based nano-nutraceuticals. Initially, there wasn't much traction gained by the brand because the raw material, cordyceps militaris mushroom, was completely unknown to the Indian market. However, the board decided to include conventional Ayurvedic formulations into the product portfolio to balance the alien ingredients of the products. Interestingly, the consumers started showing interest in low-cost products and related better to conventional ingredients. This facilitated the introduction of medicinal mushrooms to the audience.

There were several camps and awareness drives organised to inform people locally about medicinal mushrooms and their advantages. During the awareness campaigns, the team noticed various myths about mushrooms amongst the target audiences. Thanks to a lack of education on agriculture, most people did not have an idea about what mushrooms are and how they grow. The team had to move a mountain to make people understand that mushrooms can be one of the best sources of clean proteins, vitamins, minerals, micronutrients and fatty acids.

Finally, PlantBro started noticing a positive response from the consumers, and the brand started gaining traction.

This research is a summary of what PlantBro witnessed as a brand whilst spreading awareness about its products and what are the views of the audience on mushroom-based nutraceuticals. Further, we aspire to record the enthusiasm of the Indian masses towards nanotechnologically manufactured dietary supplements and nutraceuticals. Furthermore, understanding the audiences in silico is the key to a brand's success today. Thus, we did a detailed analysis of strategies followed by PlantBro Life Sciences on their social media platforms to gain reach and engagement. The following are detailed descriptions of the research questions asked in this thesis.

Research Question 1: Comparative analysis of Digital marketing strategies (DMS) opted by a start-up, PlantBro Life Sciences, India, on Instagram and Facebook. DMS of a brand lays its path to success in the present era. We were no different, as a start-up, our resources were limited, and the products we were trying to sell were completely novel for the Indian market. It was pivotal for us to be aware of the audiences to the fullest, even to gain the slightest traction from the market. Social media played a critical role in spreading awareness and educating the masses about our products and brand together.

Social media proved to be an ocean, initially, it was trial and error until we hit the right nail, we noticed out of all the strategies we followed, only a few suited our interest, like organic farm videos, product benefit videos, influencer videos, mushroom awareness

videos and static posts for gaining followers, spreading awareness about medicinal mushrooms and new age nutraceuticals formulated using nanotechnology and ultimately boosting our revenue by achieving maximum return on ad spend and conversion rate. A comprehensive comparison of strategies is significant for a start-up because it clears the picture and helps in decision-making. The social media platforms we considered were Instagram and Facebook, a clear of strategies vs followers and sales is presented. Further, the comparison shines a light on the numbers associated with traction and navigates the marketing expense of the brand. PlantBro Life Sciences minutely studied their strategies concerning followers within the first six months and realised only two out of almost twenty strategies worked efficiently. As mentioned, strategies were also evaluated in terms of sales and ROAS (return on ad spend) for the entire year 2023. A growing start-up in the Indian market faces enormous competition, and such a detailed comparison of strategies could be of great help for the new founders to give their brands a direction.

Research Question 2: Changes in Digital marketing trends in the post-pandemic phase and how it has boomed the nutraceutical industry.

The early 2000s marked a new beginning for the Indian wellness industry when brands like Dabur, Himalaya, and Baidyanath started gaining interest. The pandemic changed the perception of the Indian consumer, and their belief in Ayurvedic and traditional medicines was reinstated. Suddenly, we could observe the masses who were once fascinated by the Western way of life had started discussing the subtle Indian lifestyle. The average Indian

had started working on their health and kept a tab on what they ate during the day. The behavioural change of the Indian audiences made it possible for the wellness industry to boom. Social media marketing and search engine optimisation played a significant role by influencing people and inclining them towards traditional medicinal systems.

For a start-up like PlantBro, it was the best time to launch itself and take advantage of the growing awareness. Moreover, we as a brand became a part of the movement which aimed at educating the people on traditional ways of wellness. It is vital to study the post-pandemic boom of the wellness industry in India as it will facilitate the new age start-ups to read the mental level of their targeted audiences. Further, the newer types of formulation will help new-age start-ups to think and innovate their products. Furthermore, the trend study will avail of consolidated data for newcomers about what to and what not to do in the industry.

Research Question 3: Scope of Fung- based nutraceuticals in the Indian market.

The Indian nutraceutical market did not see an upsurge both in terms of capital and formulations until the late 2010s. It was only in the post-pandemic phase when start-ups with newer formulations started showing up in the market. Fungi-based nutraceuticals are the ones that utilise medicinal mushrooms as their basic raw material. India's nutraceutical market is not very progressive and will take a fair amount of time to accept or reject fungal nutraceuticals. Further, the availability of raw materials is critical because mushroom production in India is not very common. A manufacturing hub is required for most mushroom-based nutraceutical companies, wherein the supply of raw materials is ample. Furthermore, the efficacy of fungal nutraceuticals is yet to be acknowledged by consumers

because of the time factor, as they are comparatively new to existing ayurvedic formulations.

Thus, considering the mentioned points, it is important to gain insight into the current scenario and decide whether to enter the market or not. India is the flag bearers' market, and the first ones in the market make it big. Moreover, for fungal nutraceutical-based companies, these details are obligatory for shaping their marketing and operations strategy.

Research Question 4: Scope of Nanotechnology-based startups in India.

Nanotechnology is a modern science. The Indian nutraceutical market has been slow-moving for ages, so it might be interesting to study its response to nanotechnology. Several startups with nanotechnological formulations can be noticed in the market. Indians, being fine innovators, have started clubbing ayurvedic formulations with nano-based technologies from the West. PlantBro is one such brand that has amalgamated different ayurvedic herbs with medicinal mushrooms in their nanoforms.

For newer start-ups, it is pivotal to know if their technology is acceptable in the market or else huge capital losses can occur. Nanotechnology increases the efficacy of the nutraceuticals manifold, but the prices of the products also increase. Thus, it will be interesting to see how people react to nutraceuticals, which are highly priced but are also equally efficient. Indian consumers are known to be the ones going with cost-effective products; it would be intriguing to see if they follow the same pattern with nano-based nutraceuticals or if we see an exception.

3.6 Research Design

The Indian start-up ecosystem is one of the fastest-growing ones globally because of the market size. However, it's also one of the most dynamic markets owing to limited resources, audience age and competition. The start-up journey in India is more of a roller-coaster ride because we have aimed to deliver what is expected of a developed economy whilst being a developing economy. This study aims to elucidate different digital marketing strategies followed by PlantBro Life Sciences Private Limited, a nutraceutical manufacturer and retailer. There are majorly four research questions, and each question has been answered using a different research methodology. Following is a brief description of methodologies associated with respective questions.

Research Question 1: Comparative analysis of Digital marketing strategies (DMS) opted by a start-up, PlantBro Life Sciences, India.

In this question, we evaluated the growth of the company's sales, following and traction on social media platforms like Instagram and Facebook through different DMS. A comparative study of strategies versus sales and followers gained is represented in the form of graphs and pie charts where we determined the efficiency of several DMS. Additionally, the social media head of PlantBro Life Sciences was interviewed to attain a hawk's eye view of the scenario and get insight into the reality of influencer marketing in India.

Research Question 2: Changes in Digital marketing trends in the post-pandemic phase and how it has boomed the nutraceutical industry.

In this question, we addressed the dynamically changing DMS of the ayurvedic startups, specifically the ones related to nutraceuticals. A close comparison of the digital marketing campaigns of companies like KAPIVA, Wellbeing Nutrition, Oziva, Man Matters and Plix with PlantBro Life Sciences was conducted. The data was collected through social media platforms, brand websites and e-commerce marketplaces and depicted in the form of a table.

Research Question 3: Scope of Fungi nutraceuticals in the Indian market.

The Indian nutraceutical market is a conventional one but is transforming rapidly. There have been a few start-ups, namely Ace Blend, Rooted Actives, and Lifecykel Inc., which are focused entirely on fungi-based products. The audience's reaction to these products was extremely valuable and recorded through two different questionnaires specifically designed for GenX and GenZ. The results of the questionnaires were portrayed in the form of text, tables and graphs.

Research Question 4: Scope of Nanotechnology-based start-ups in India.

Nanotechnology is a complex science, and its application in the field of nutraceuticals is even more complicated because superfoods are still questioned in the market. A large share of the audience still needs to be educated on topics like core benefits, ingredients, daily dosage, etc. A change of formulation type becomes highly debatable and needs to be opinionated; we interviewed CEOs and founders of four different companies indulged in

nano nutraceuticals, including Plantbro life sciences, the results are depicted as a discussion and summarised in the form of a tabular column.

3.7 Population and Sample

As discussed, questions 1 and 2 are strategy-based, and the approach followed was interdisciplinary. We conducted both interpretative and qualitative research to point out the most promising social media strategies for PlantBro Life Sciences. The interpretative research was conducted by analyzing different social media pages and backend data of sales following a relative approach, which established a clear relationship between successful social media campaigns and sales figures. In the case of qualitative research, we interviewed the social media head at PlantBro Life Sciences to clear the fog in understanding the current scenarios and dynamics of the market. Interpretative research formed the conscious part of the questions, whilst the interviews provided insights into the sub-conscious grey areas in terms of the dynamic nature of the arena.

Further, for questions 3 a purely quantitative approach was followed in which we conducted a physical survey in a housing society located in Gurugram, the technology hub of north India. We selected a set of 150 people using a random selection methodology based on convenience and randomness; these include officials of the society, from secretaries to security to residents. We selected 45 people aged 15-30, 35 people from 30-35, 35 each from 45-60 and 60 above age groups respectively. We specifically selected people who were enthusiastic about nutraceuticals and knew about their benefits. The maximum number of people were from the age group 15-30 because the data suggested that the majority of the buyers were from this age category, followed by the age group 30-45. The results of the survey were converted into interpretative data where we analysed

different aspects like the popularity and scope of fungi-based nutraceuticals. The sample size of 150 people was adequate for quantitative survey-based research, and the homogeneity of the samples was maintained accordingly. In question 4, we intend to record the scope of nanotechnology-based companies in the Indian market. We selected four major nano-nutraceutical companies and requested their marketing heads to get with us in a discussion on the same; the results are presented in the form of a discussion.

3.8 Participant Selection

This research aspires to answer four questions; each question targets a particular population type. The first question is about the comparative analysis of DMS, so an interview with the social media marketing head at PlantBro Life Sciences was conducted alongside an interpretative approach wherein a comparative analysis of the digital media strategies of PlantBro is presented. For the second question, social media strategies of popular brands like Kapiva, Oziva, Man Matters, Wellbeing Nutrition, Rooted Actives and PlantBro life sciences are presented in the form of a tabular column.

The third and fourth questions were opinion-based. Hence, survey research methodology was used in the form of questionnaires which were circulated in a set of 150 people physically from different age groups in a housing society called Aashiyana apartments wherein 45 people are from 15-30, 35 each from 30-45, 45-60 and 60 above age groups. For survey research, people were selected based on convenience, availability, and interest. Group interviews were organized with people with the most intriguing answers. Furthermore, for question 4, wherein we elucidate the scope of nanotechnology-based

startups, CEOs of 4 different nanotechnology-based companies, including PlantBro were interviewed.

3.9 Instrumentation

Through this research, we address four different research questions. For questions one and two, both data collection and interviews were conducted. For interpretative research, we followed standard statistical methods like mean. In the case of qualitative research, we conducted physical interviews with the social media head at PlantBro Life Sciences, who is an expert at designing and implementing DMS.

The third and fourth questions were purely surveys, and instead of doing an online survey, we selected an apartment building named Aashiyana Apartments, wherein a group of 150 people were selected. We first distributed the questionnaires amongst the officials of the building, like the secretary, general secretary, extracurricular activity manager, and security chief, followed by the residents. A post-survey screening was conducted where we selected people with the most interesting set of answers and further interviewed them in groups to get a better insight into the subject. The whole survey data is presented in graphical representation using Microsoft Excel.

3.10 Data Collection Procedures

For interpretive research, data was collected through social media pages like Instagram, Facebook, LinkedIn, Snapchat of PlantBro Life Sciences and other competitors like Kapiva, Man Matters, PlantBro, Wellbeing Nutrition, Oziva, Rooted Actives and Plix.. For competitor brands, we considered their recent posting trends, new launches, sales numbers on Amazon and word of mouth from volunteer buyers. Qualitative data was

collected through means of interviews and consolidated in the form of a tabular column for analysis.

3.11 Data Analysis

We have addressed four questions in this research, Question 1, is purely interpretative, wherein we collected data from PlantBro's Instagram and Facebook pages, further, we compared different digital marketing strategies in terms of sales, return on ad spend, conversion rates and follower gain. The data was very precisely converted into graphs and analyzed using simple statistical methodology. At the end of each section, we presented a pie chart that explains the role of each strategy for desired parameters like conversion rates and return on ad spend. Finally, we consolidated the numbers in the form of line graphs, which provided a clear picture of how each digital marketing strategy helped PlantBro gain traction on social media.

Question 2, wherein we provide a comprehensive qualitative analysis of multiple strategies used by nutraceutical brands on Instagram, Facebook, YouTube, Amazon and Flipkart. We precisely divided the brands based on funding they acquired from the market like extremely funded brands, moderately funded and bootstrapped companies like PlantBro. We provided a clear picture in form of a table which specifies strategies for brands of each category. We collected the data from the mentioned social media and e-commerce platforms, checked number of each post type per brand and prepared a list of strategies which will fit a particular brand type.

Question 3, is a purely interpretative, where we present the results of the survey we conducted in the form of line graphs. We provided our 150 participants with a questionnaire, which they addressed as per their opinion and then we formulated those answers into percentage and generated comparison chart for each question.

Question 4, is completely qualitative wherein, we present a discussion with chief executives of four different nanotechnology based brands in India. These companies are based in New Delhi, Dehradun, Faridabad and each of the CEOs are masters of digital marketing in their own domain. We very precisely presented a set of questions which are mentioned in Appendix C and talked to each of the executives separately to avoid the influence of opinions. The names and company details are mentioned in the results section on page number 165. Their opinions were further analyzed and presented in form of discussion which provides a clear picture of the scope of nanotech based startups in India.

3.12 Research Design Limitations

The present study involves both interpretative and qualitative research methods, for the research methodologies concerning data collection, the limitations are remote, the process of data collection could have been more efficient, and the platforms used for collecting data could have been searched in a deeper detail. However, after completion of the research, we did feel that a potential limitation was in data analysis, had we used artificial intelligence, the compiled results could have been more critical.

Secondly, the current research is predominantly qualitative and would benefit from the more rigorous methodology. This could include the use of complex statistical models and

implementation of online questionnaires and Google Sheets. However, we did take the utmost care in conducting surveys and interviews about the selection of participants, but after compiling results, we felt that the research groups could have been more product specific. We underestimated the popularity quotient of nutraceuticals in India and kept our sample size limited to 150 participants, which could have been around 500 people. It was while conducting the survey that we realized that the interested participants were more than double for the same agenda. The age groups we considered could have been more segmented. Instead of 15-30, 30-45, 45-60 and above; we could have used 20-30, 30-40, 40-50, 50--70, 70-80. This would have provided, a better picture of the placement of nutraceuticals in the urban society of India. In question 4, we interviewed CEOs from 4 different nontechnology-based brands in India.

However, we were not able to publish their credentials, which could have been critical for research reliability.

3.13 Conclusion

The current study revolves around the Indian start-up scenario, particularly in the nutraceutical domain, focusing on DMS followed by PlantBro Life Sciences. Herein, a comparative analysis of strategies is presented along with a qualitative analysis of the opinions of a set of 150 people. The comparative analysis was done between 6 brands, and the data was collected online through e-commerce platforms like Amazon and Flipkart and social media platforms like Instagram, Facebook and YouTube. The survey was conducted physically in a housing society where 150 primary subjects were considered, and 20 secondary subjects were interviewed in a group. The research methodologies followed

were apt for gaining insights into the current digital scenario, anticipating consumer behaviour and analyzing the scope of nanotechnology-based startups in India. The methodology of this research is interdisciplinary in the first two questions. We used the data available on the accessible internet through different E-commerce and social media platforms: Amazon, Flipkart, Nyakka, Facebook, Instagram and YouTube. In question 3, we used a random selection of our survey participants based on convenience and interest. In question 4, we specifically selected CEOs of nanotechnology-based startups to gain insight into the prospects of the industry.

CHAPTER IV: RESULTS

This research is focused on providing new-age nutraceutical-based startups with a road map for their initial years in the Indian market. There are primarily four research questions we answer through this research.

Question 1: A comprehensive interpretative analysis of Digital marketing strategies (DMS) followed by PlantBro Life Sciences (P) Limited on Instagram and Facebook is presented. Through this part of our research, we provide insight into the set of strategies for gaining followers and sales on Facebook and Instagram. The comparative analysis shows a clear picture of the effectiveness of each strategy from the sales and followers' perspective. Return On Ad Spend (ROAS) is a significant factor for a startup as it defines its investment-to-income ratio, in this section, we have clearly explained the ROAS associated with different strategies.

Following the analysis is the interview conducted with the marketing head of PlantBro, which provides detailed insights into the current scenario and empowers startups by providing a hawk's eye view. Through this question, we aspire to clear the fog for founders on selecting a digital strategy, estimating the spend on it and anticipating outcomes from it. The interview will help in summarising the results and building conceptual knowledge in terms of social media and performance marketing.

Question 2: Through this question, we shine a light on DMS, followed by nutraceutical brands in the COVID-19 phase and how it has affected the digital ecosystem. Herein, we present a

qualitative analysis of strategies followed by brands like Kapiva, Man Matters, PlantBro, Wellbeing Nutrition, Oziva, Rooted Actives and Plix. All these brands are big names in the market, and their strategies are the face of current digital marketing in the nutraceutical space.

Next, we present a comparison of different e-commerce strategies followed by these brands on Amazon India and Flipkart with a clear idea of the capital involved and the role of external funding, which will enable the founders to select a strategy that suits their situation aptly. This part of our research will help founders in framing their DMS and e-commerce strategies, so they go hand in hand in the post-COVID-19 era. As we have considered seven brands, from bootstrapped to heftily funded, the pool of strategies is large, and the capital involved with each strategy is also mentioned, so founders will have a menu to choose from.

Question 3: In this section, we evaluated the understanding of the Indian audiences in terms of nutraceuticals and fungal supplements. As mentioned earlier, this is a survey-based question, and the results of the survey are presented in an interpretative manner. Fungal supplements are comparatively unexplored, and understanding their dynamics was crucial for nutraceutical brands because it's an innovation-led market. The nutraceutical industry is trend-driven, and different ingredients trend at different time points. Medicinal mushrooms are trending globally, and anticipating their growth in India was pivotal. We carried out this study considering a set of 150 people from different age groups for uniformity of results and maintaining the heterogeneity of the study. Initially, we questioned people about nutraceuticals and traditional medicinal systems and went deeper gradually into the niche of medicinal mushroom-based products.

Conclusively, through this question, we present the mindset of audiences to new founders and enlist the challenges they might face in the domain. Additionally, a clear picture of the target audience is presented to prevent founders from exhausting their resources on non-interested audiences.

Question 4: This section reveals the mindset of chief executive officers (CEOs) of 4 different brands based on nanotechnology-based nutraceutical startups. To maintain anonymity, we did not disclose the names of the brands and represented the opinions of the CEOs in one-liner in a tabular column. The interview was basic and only covered areas that were common to major business domains. The set of questions was based on the scope of nanotechnology and consumer inclination towards such products. As it is a comparatively new area, we asked the CEOs about their awareness strategies. Next, there were DMS, social media platforms, search engines and the current standing of the brands. We focused on how social media helped these CEOs in gaining social media followers and generating leads separately. We primarily dived into Facebook, Instagram and YouTube strategies and their roles in brand building.

Conclusively, we asked for a final verdict wherein the CEOs needed to answer if nanotechnology-based nutraceutical startups are worth it or not. Through this question, we present a clear picture to the audience about the scope, strategies and current standing of the industry.

4.2 Instagram & Facebook Strategies

This question is entirely based on DMS, followed by PlantBro Life Sciences (P) Limited on Facebook and Instagram in terms of sales and followers

4.2.1 Instagram Followers Strategies

In this section, we present a comparative analysis of eight different strategies followed in terms of post type, content, influencer marketing, founder videos, organic farm videos, diet videos and mushrooms videos. Data from January 2023 to June 2023, covering six months. A comprehensive follower-based analysis was conducted across the seven strategies, and based on the findings, the number of posts per month was adjusted accordingly, either increased or decreased. Initially, we started with static and static carousel posts followed by influencer video posts, founder videos, Organic brand videos, diet awareness videos, mushroom videos and giveaways, **Figure 24 (A, C, E, F, G, H)**.

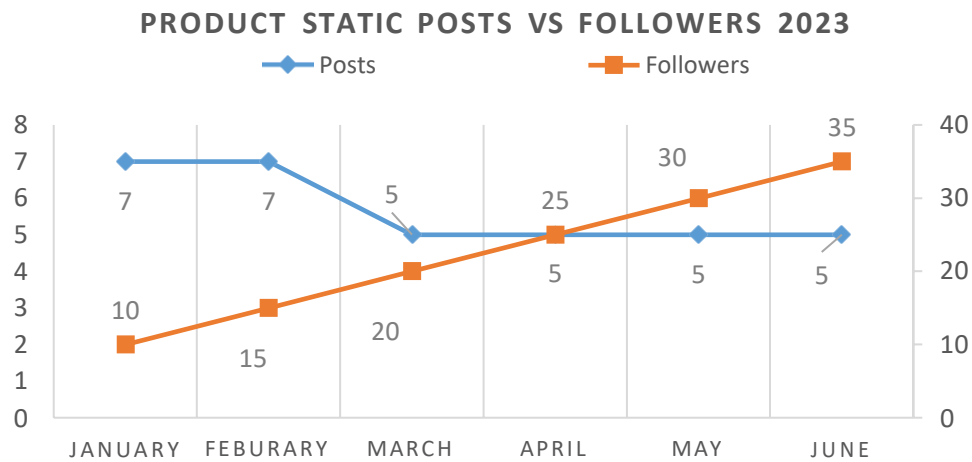


Figure 24 : (A) Static posts Vs Followers (The X-axis is a timeline, the primary Y-axis are posts and the secondary Y-axis is the number of followers).

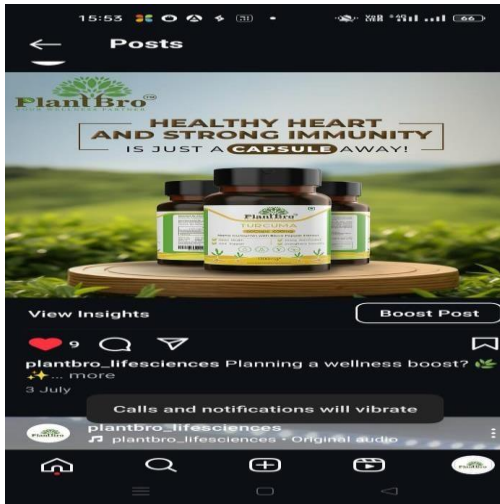


Figure 24 (B) : Visual representation of Static posts static posts on Instagram.

Figure 24 (A) explains the impact of static posts wherein the follower-to-post ratio is evaluated. The primary X-axis shows the timeline in months from January to June. The primary Y-axis denotes the number of posts per month, and the secondary Y-axis shines light on the number of followers gained in each month. The follower-to-post ratio was quite low initially, but the traction strengthened slowly in the later stages but was still not up to the mark. In the first month, we posted seven static posts, of which gained us ten followers, which is approximately 1.5 followers/post. In February, we gained 15 followers from 7 posts, two followers/post. It was from the third month when we decided to lower our posts from 7 to 5 per month, and the follower ratio rose to 5 per post. Figure 24 (B) is a visual representation of static posts on the Instagram profile of PlantBro Life Sciences.

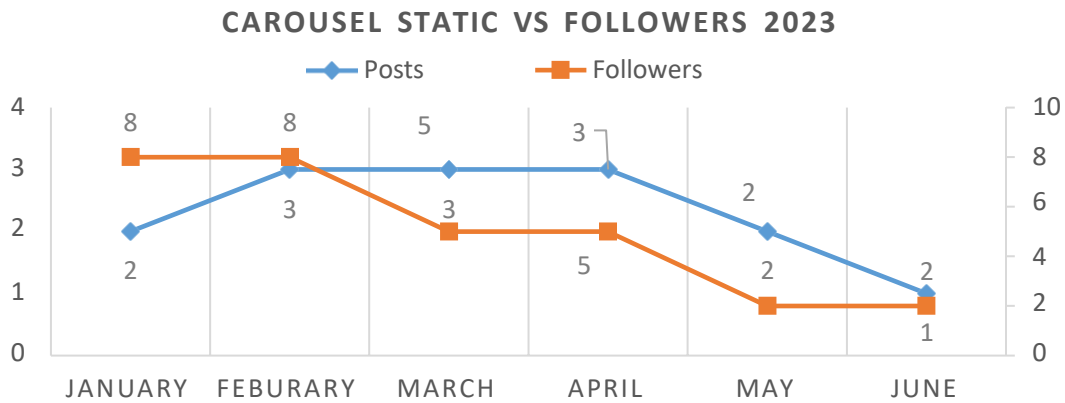


Figure 24: (C) Carousel statics Vs Followers (The X-axis is a timeline, the primary Y-axis are posts and the secondary Y-axis is the number of followers).

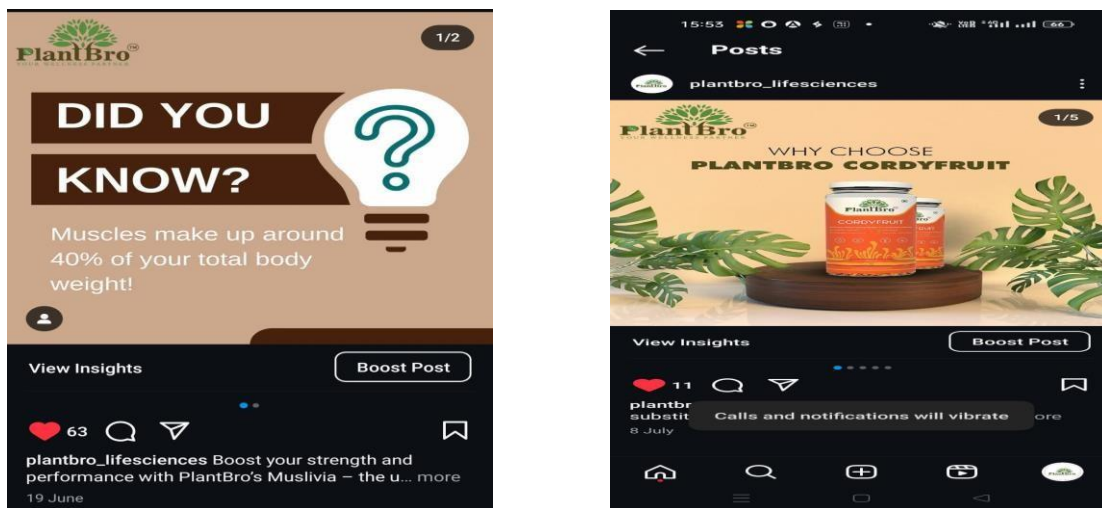


Figure 24 (D) : Visual representation of Carousel posts static posts on the Instagram.

Figure 24 (C) The primary X-axis shows the timeline in months from January to June. The primary Y-axis denotes the number of posts per month, and the secondary Y-axis shines a light on the number of followers gained each month and shines a light on a similar strategy wherein we posted a carousel of static posts displaying the benefits of our products, but this approach was a complete failure as we were only able to gather 2 followers from 8

posts in the first month and the number did not improve through the six months' time.

Figure 24 (D) is the visual representation of Carousel posts on the Instagram profile.

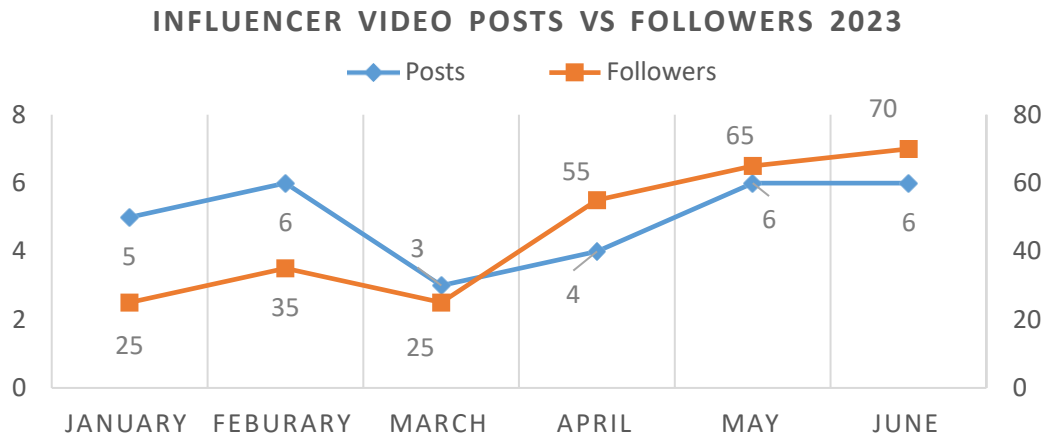


Figure 24 : (E) Influencer Video Posts Vs Followers (The X-axis is a timeline, the primary Y-axis are posts, and the secondary Y-axis is the number of followers).

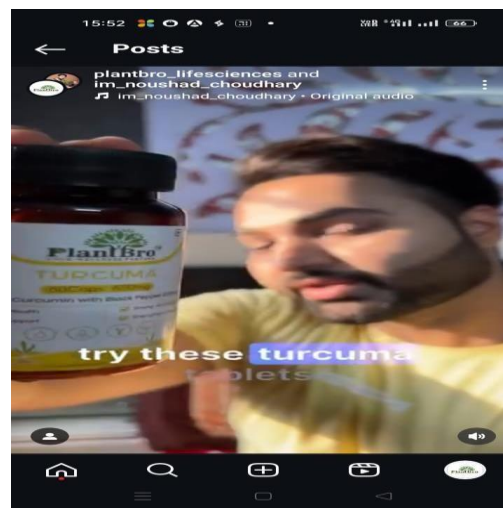
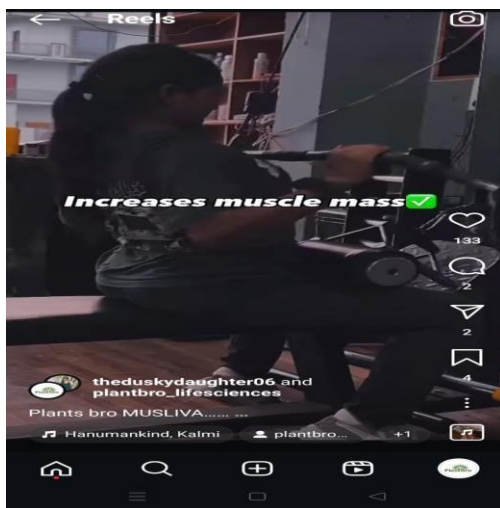


Figure 24 (E): The primary X-axis shows the timeline in months from January to June. The primary Y-axis denotes the number of posts per month, and the secondary Y-axis

Figure 24 (F) : Visual representation of Influencer video posts on Instagram.

good as we got 25 followers from 5 videos from January. A clear upward trend was noticed through this strategy from February itself, but the best results were obtained from the

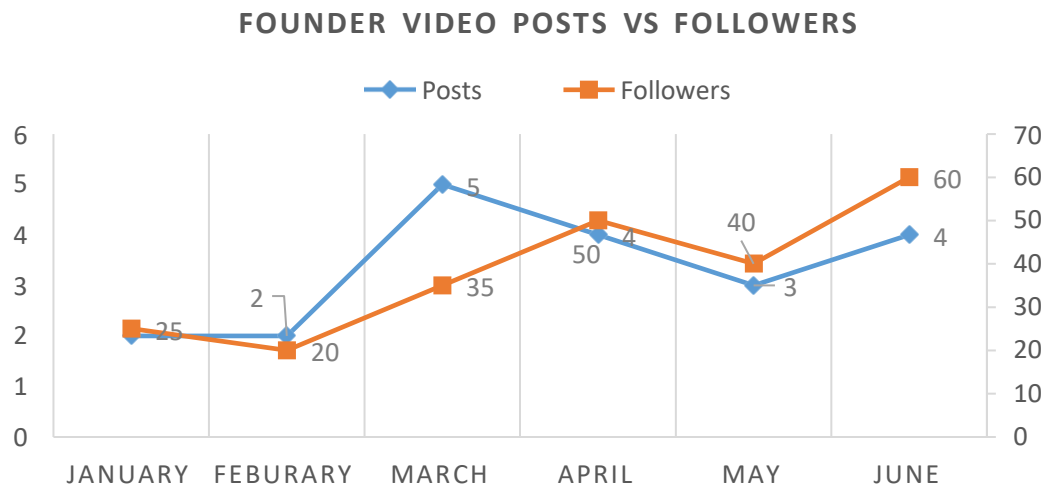


Figure 24 : (G) Founder Video Posts Vs Followers (The X-axis is a timeline, the primary Y-axis are posts, and the secondary Y-axis is the number of followers).



Figure 24 (H): Visual representation of Founder video posts on Instagram.

Figure 24 (G): The primary X-axis shows the timeline in months from January to June. The primary Y-axis denotes the number of posts per month, and the secondary Y-axis shines light on the number of followers gained each month. The most promising strategy amongst the group was that the founder himself posted videos on product quality, benefits, and authenticity. This was when we resonated with our audience, achieving a whopping 12 followers per post ratio starting January. Over the next six months, we maintained a similar ratio. The founder videos were slightly better than influencer videos but were not as pricy.

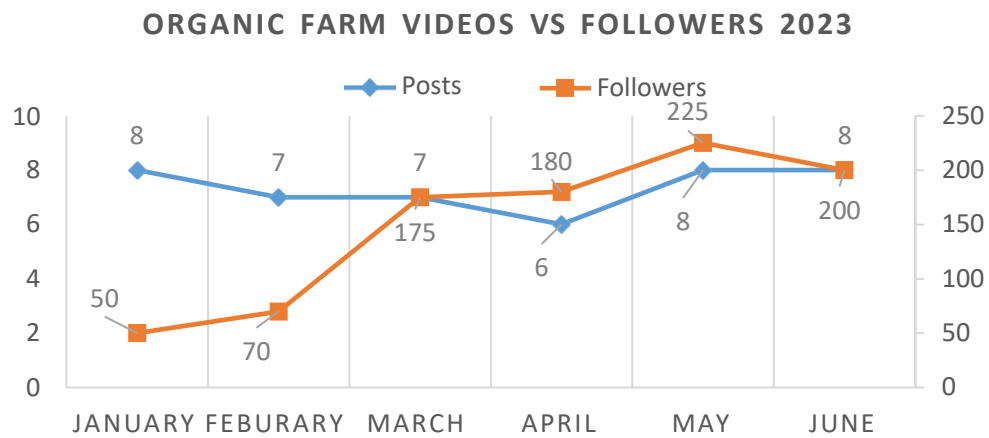


Figure 24 : (I) Organic Farm Video Posts Vs Followers (The X-axis is a timeline, the primary Y-axis are posts, and the secondary Y-axis is the number of followers).

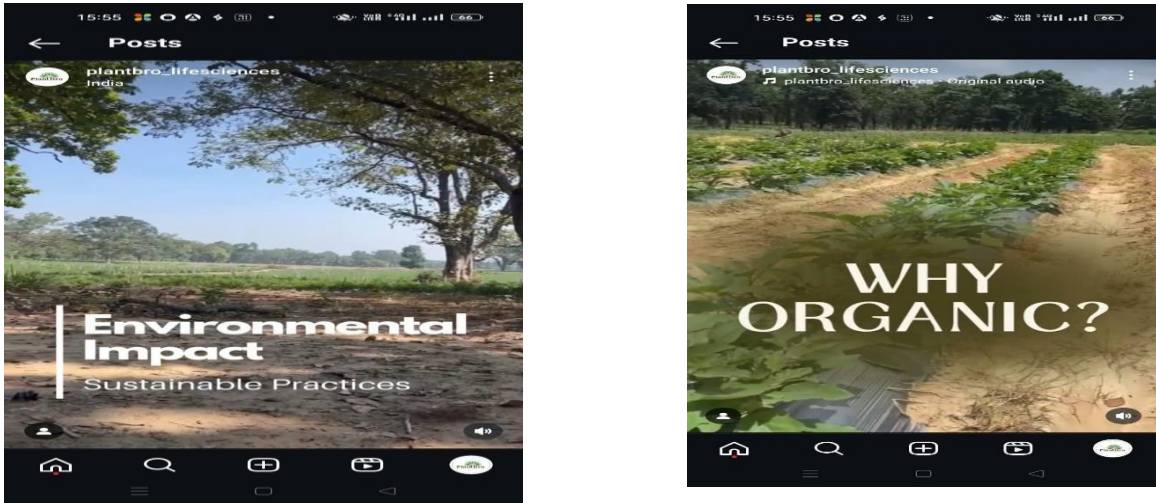


Figure 24 (J): Visual representation of Organic video posts on Instagram.

Figure 24 (I): The primary X-axis shows the monthly timeline in the period from January to June. The primary Y-axis denotes the number of posts per month, and the secondary Y-axis shines light on the number of followers gained each month. Organic brand videos wherein we highlighted different processes of product manufacturing, raw material collection and labor management on our farm and manufacturing units. This strategy proved to be a silver bullet for our brand right from the very beginning. In January, we posted eight videos, which gave us 50 followers, a considerable number for a cost-effective strategy, but after March, we started gaining 35-40 followers per post, which was miraculous because all we had to do was film what we were doing regularly. We posted a total of 44 posts, which gained us 900 followers. This strategy proved that the audiences need not be lured by expensive influencers or models necessarily if there is organic content that can prove our product's authenticity.

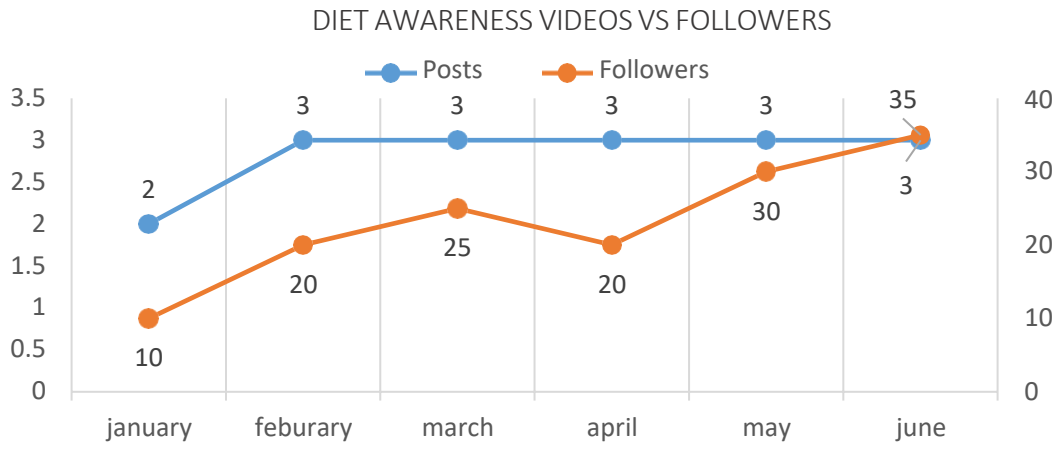


Figure 24: (K) Diet Awareness Video Posts Vs Followers (The X-axis is a timeline, the primary Y-axis are posts, and the secondary Y-axis is the number of followers).



Figure 24 (L): Visual representation of Diet Awareness video posts on Instagram.

Figure 24 (K): The primary X-axis shows the timeline in months from January to June. The primary Y-axis denotes the number of posts per month, and the secondary Y-axis shines light on the number of followers gained each month. Diet awareness videos were a filler strategy to keep our audiences entertained because after one point of time they are bored looking at similar content. Through this strategy, we wanted to educate the audience about new recipes encircling our products through which they could complement their health. The strategy was successful in the later stages, but we were able to form a community where all the people with similar interests commented and exchanged views. We gained approximately 7-10 followers per post, but a small community was formed where people actively exchanged opinions on different superfoods.

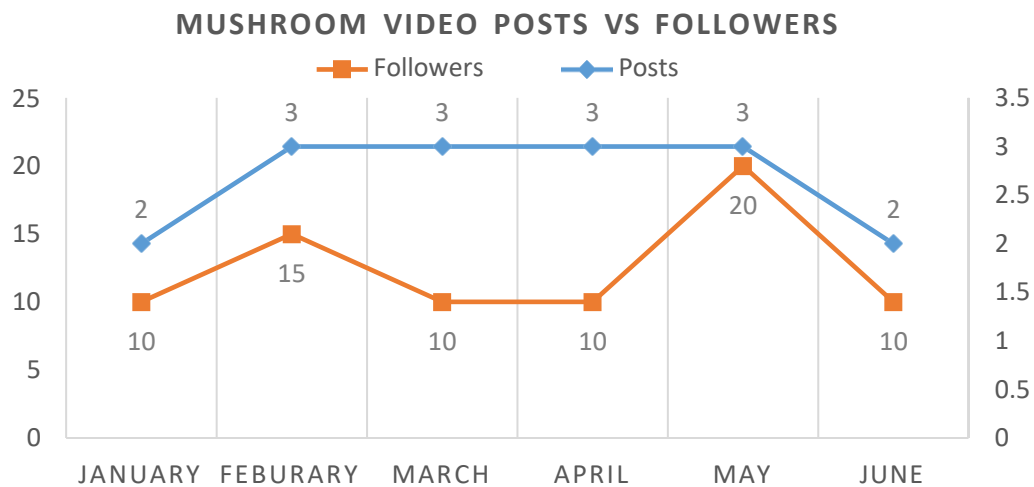


Figure 24 : (M) Mushroom Video Posts Vs Followers (The X-axis is a timeline, the primary Y-axis are posts, and the secondary Y-axis is the number of followers).



Figure 24 (N): Visual representation of Diet Awareness video posts on Instagram.

Figure (M): The primary X-axis shows the timeline in months from January to June. The primary Y-axis denotes the number of posts per month, and the secondary Y-axis shines light on the number of followers gained each month. Mushroom videos like diet awareness videos were a filler strategy where we tried educating the masses about medicinal mushrooms. Although this strategy performed descent, it contributed greatly to the process of community building we documented that the people who were enthusiastic about diet posts were active for mushroom videos as well, so despite gaining 3-5 followers per post, we kept posting because it was building our loyal follower base.



Figure 24 : (O) Giveaways Vs Followers. The X-axis is the timeline, the primary Y-axis are posts, and the secondary Y-axis is the number of followers.

Figure 24 (H): The X-axis denotes the number of giveaways planned, and the Y-axis shows the number of followers gained in each giveaway. The second-best strategy for us on Instagram was the giveaways. We had planned four giveaways in six months, and each winner had to tag PlantBro in their post or do an activity to win. Indians have a great affinity for freebies, and we generously awarded the winners by sending them three products each. Through giveaways, we gained around 700 followers.

To summaries the results of the strategies we followed on Instagram, Figure 25 explains the contribution of different strategies in gaining followers. The maximum contribution was from organic farm videos and giveaways, followed by influencer videos and founder

videos. However, the performance of static posts and carousels was not satisfactory, but these are fillers to keep up with the number of posts.

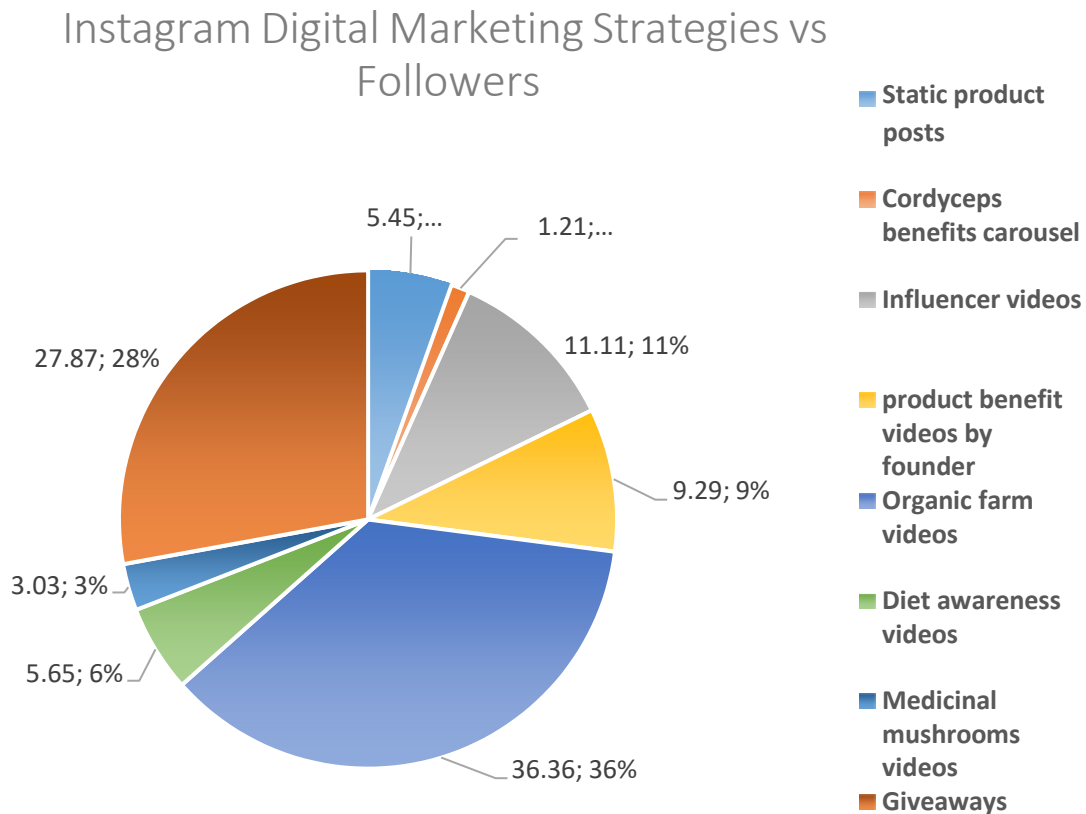


Figure 25: Percentage contribution of each Instagram strategy in gaining followers

4.2.2 Instagram Sales Strategies

In this section, we elucidate strategies followed by PlantBro Life Sciences in gaining sales on Instagram. As discussed above, organic farm and brand videos were the best strategies for gaining followers; we used the same approach for boosting sales as well. In our marketing campaigns, we specifically marked the demographics associated with particular areas. We selected our audience profile very carefully, giving the utmost importance to

age, gender, work profile and place of residence. Through this section, a clear depiction of PlantBro’s ad spend versus sales vs Return on Ad Spend (ROAS) and conversion rate is demonstrated in **Figure 26**. ROAS and conversion rate are the most important metrics for understanding a brand’s performance marketing results. In the case of PlantBro, as we are a modern-age ayurvedic brand, it required extensive awareness videos to first educate our audiences and then go for conversions. We started performance marketing 3 months after we started posting on social media because it’s a risky affair as the costs associated with it are hefty. A whole year of data from January 2023 to December 2023 is presented wherein we initially started with negative ROAS and conversions, but by the year’s end, we managed to get the value to 2, which was a milestone for us.

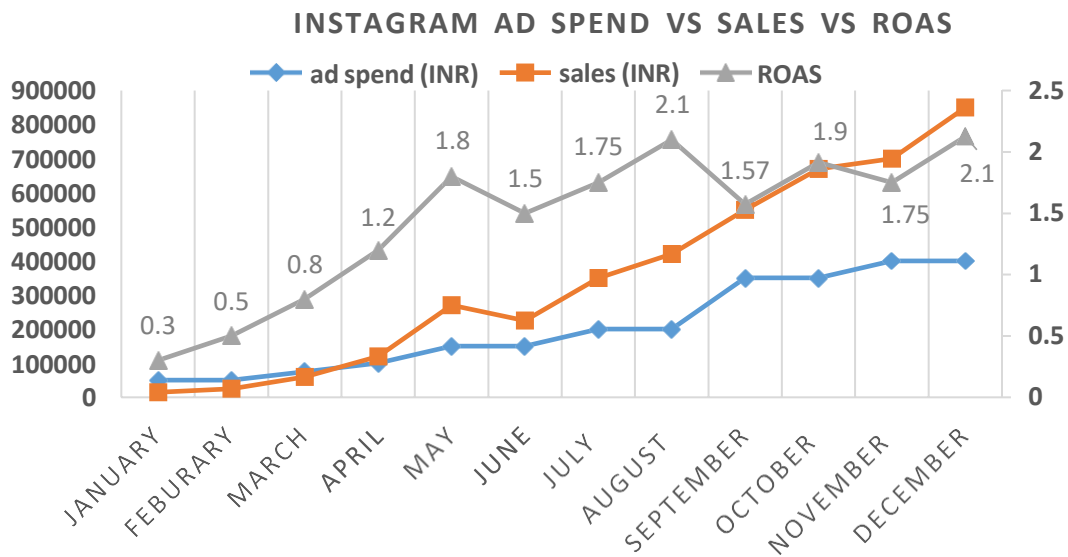


Figure 26: PlantBro’s Ad Spend Vs Sales Vs ROAS 2023. The X-axis is the timeline, the

primary Y-axis is spending and the secondary Y-axis is the ROAS

Figure 26 explains PlantBro’s cumulated performance in terms of sales and ROAS through the year 2023. The primary X-axis shows the timeline in months from January to December. The primary Y-axis denotes the spending per month, and the secondary Y-axis

shines light on the ROAS generated each month. In January, the sales recorded were a mere 30% of the ad's spending, this was because of the log phase and the confusion in strategies we were following. It took us a good 4-month period to identify the strategies which were working well for us. In solving the sales problem, the set of strategies for followers helped greatly. The organic farm and manufacturing videos worked for both followers and sales. However, the sales figures started getting higher only after August because spreading awareness was extraordinarily complex. It can be noticed from **Figure 26** that despite regular ad spending, we were not able to record a ROAS above 2.5 we owe to the domain we are working in, medicinal mushrooms are a novel domain and will take time to gain friction. However, we were able to break even and carry out our operations smoothly.

The strategy that helped the most was the product benefits videos by the founder. The benefits strategy did not do too well with followers, but with sales, the numbers were convincing, maybe because the interested buyers were educated well with the content or the founder quotient worked, which connected the audience with the brand. Following is a detailed explanation of each strategy in **Figure 27 (A) (B) and (C) (D)**. The X-axis shows the timeline in the months from January to December. The primary Y-axis denotes the spend per month, and the secondary Y-axis shines light on the ROAS generated each month for **Figure 27 (A)** and the conversion rate in **Figure 27(B)**.

ORGANIC FARM VIDEOS AD SPEND VS ROAS 2023

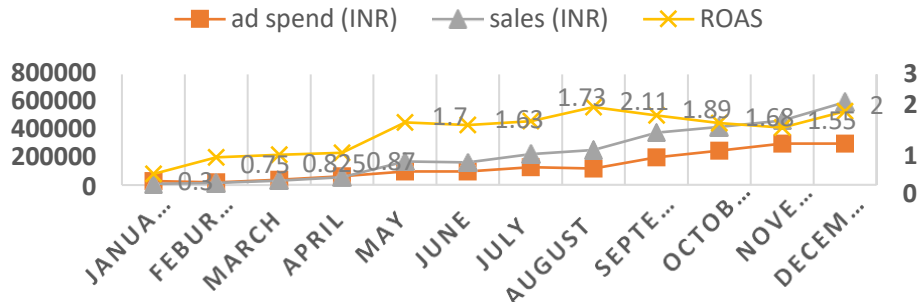


Figure 27 (A): performance of organic farm videos in sales 2023 on Instagram. The X-axis is a timeline, the primary Y-axis is total spend, and the secondary Y-axis is the ROAS

Figure 27 (A): The primary X-axis shows the timeline in months from January to December. The primary Y-axis denotes the spending per month, and the secondary Y-axis shines light on the ROAS generated each month. The sales were generated through using video ads in which we showed how our raw materials are grown in our fields, processed by the underprivileged tribal communities of India and how they are finally converted into finished goods. The audience connected greatly with the organic essence of PlantBro, and a connection was made instantly. In the nutraceutical industry, the trust factor lacks a lot, and that’s exactly where organic brand videos work.

In January and February, we did not do too well and only generated 0.3 and 0.75 ROAS with conversion rates below 5%, respectively, but we looked closely at the numbers doubled in February. It was in March that we started making decent revenue, at least enough to cover our ad spend. From May to December, we broke even. We did make profits at times, but we were happy that the expenses were being covered and we were getting

regular orders with positive reviews. A total sum of 1.7 million was invested in Ad spend, which generated a revenue 2.8 million Indian rupee.

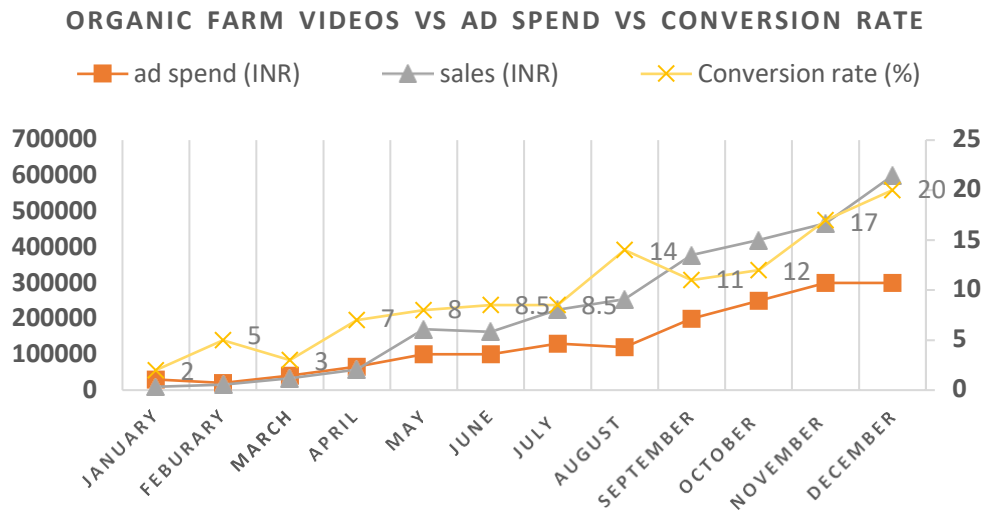


Figure 27 (B): performance of organic brand videos in sales 2023 on Instagram. The X-axis is a timeline, the primary Y-axis is total spending and the secondary Y-axis is the Conversion Rate.

Figure 27 (B): Explains the second most significant metric of performance marketing, conversion rate, it is the final verdict of a social media ad is the count of clicks on the final step of the campaign, meaning it gives a percentage of people who got converted and bought a particular service or product through a social media campaign. In our case, we demonstrate the conversion rate through our organic farm videos, which was considerably low in the initial period and is in perfect sync with the ROAS, both of these metrics were noticed following an exponential trend. Conversion rates in the first three months were

well below 5%, meaning only 5% of the people who clicked on the ad bought the product. In the following months, a gradual increase was noticed in May, June and July we noticed a conversion rate of 8-10%, which is considered satisfactory considering the nature of our products. In the second half of the year, the figure started to rise, and we continuously recorded a conversion rate of 14%, 17%, 18%, and 20% for September, October, November and December. We were kind of satisfied with the performance, and these numbers increased to 30% in the year 2024, which is not demonstrated in this study.

The ROAS and conversion rates were quite satisfactory, we achieved a ROAS of 2.5 and a conversion rate of 20% by the end of the year 2023 through organic brand videos strategy. Product benefit videos were the second-best strategy for PlantBro in terms of ROAS and conversion rate, Figure 27 (C) and (D) depict the mentioned.

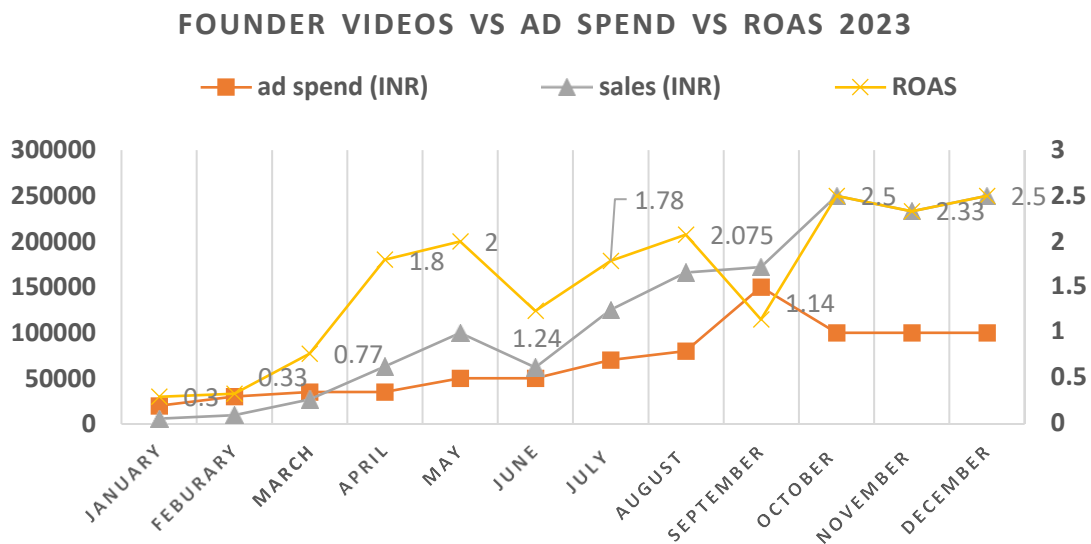


Figure 27 (C): Performance of product benefit videos in sales 2023 on Instagram. The X-axis is the timeline, the primary Y-axis is spent, and the secondary Y-axis is the ROAS

Figure 27 (C): The primary X-axis shows the timeline in months from January to December. The primary Y-axis denotes the spending per month, and the secondary Y-axis shines light on the ROAS generated each month. Customers interested in nutraceutical products continuously look for literature that gives deeper insights into the product specifications, like benefits and formulations. In this strategy, we very minutely explained the benefits of our products with testimonies and lab reports. Initially, in January and February, like the organic videos, the ROAS was low and did show a sharp increase until April. That was mainly because we were not including testimonies in the first three months. The audience demanded trust before investing in our products because medicinal mushrooms were new to the market.

A sharp increase in the ROAS was noticed in April, where the value rose from 0.33 to 1.8, almost sixfold in the first two months. This was a cumulative effect of strategies we were using on Instagram. On the one hand, we were constantly posting about our practices as normal posts and, alongside the ad campaigns, highlighted the benefits of the products with testimonials. In October, November, and December, we almost achieved 2.5 ROAS, which balanced all of our previous losses and made us some micro profits. Summarizing the ad campaigns on Instagram, we can conclude that if the ad campaigns are in line with general posting, which is effective enough to influence the audience, then we can expect a positive response in terms of revenue. A total sum of 8.2 million INR was spent using the product benefits strategy, which generated 15 million INR in revenue.

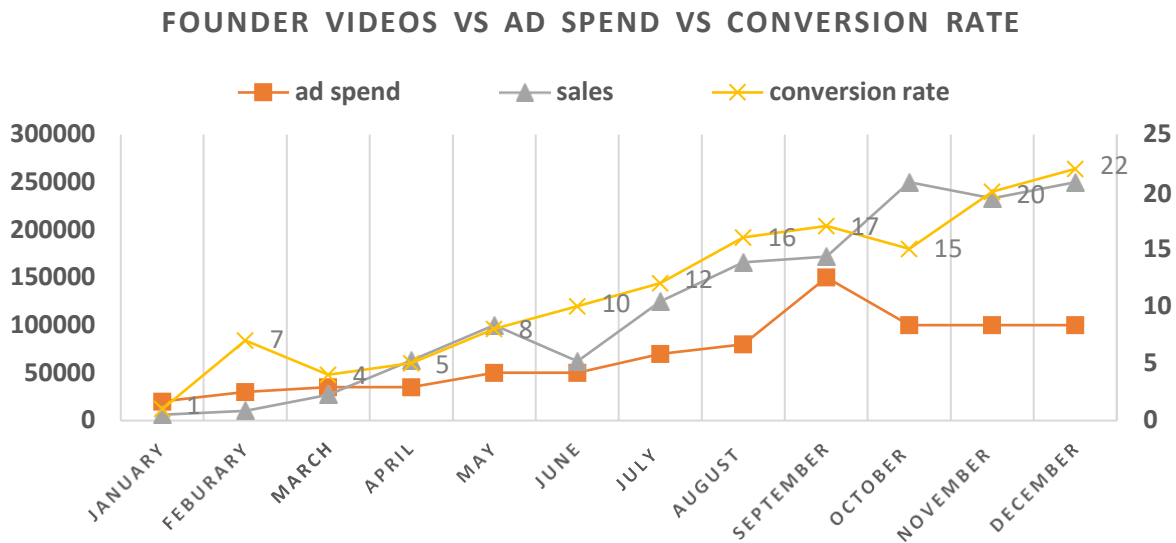


Figure 27 (D): Performance of product benefit videos in sales 2023 on Instagram. The X-axis is the timeline, the primary Y-axis is spend and the secondary Y-axis is the Conversion Rate.

Figure 27 (D): Explains the second most significant metric of performance marketing, conversion rate. It is the final verdict of a social media ad, represented by the count of clicks on the final step of the campaign, meaning it gives a percentage of people who converted and purchased a particular service or product through a social media campaign. In our case, we demonstrate the conversion rate through our organic farm videos, which was considerably low in the initial period and is in perfect sync with the ROAS. Both metrics showed an exponential trend, conversion rates in the first three months were well below 5%, meaning only 5% of the people who clicked on the ad purchased the product. In the following months, a gradual increase was noticed in May, June, and July; we observed a conversion rate of 8-10%, which was considered satisfactory, given the nature of our products. In the second half of the year, the figure started to rise, and we continuously

recorded conversion rates of 12%, 16%, 17%, and 20% for September, October, November, and December respectively. We were somewhat satisfied with the performance, and these numbers increased to 35% in the year 2024, which is not demonstrated in this study.

4.2.3 Facebook Followers Strategy

Facebook is equally important as Instagram when it comes to brand popularity on social media. In the case of PlantBro Life Sciences, Facebook’s contribution has been on the higher side in gaining brand positioning and traction. The total followers on Facebook are around 19K, whilst on Instagram, we have around 5K. However, there are similarities between the two platforms, but we noticed that some strategies that did well on Instagram were not so effective on Facebook and vice versa. In this section, we will walk you through the strategies we followed on Facebook to gain followers Figure 28 (A, B, C, D, E, F, G, H). Six-month data from January to June 2023 is presented.

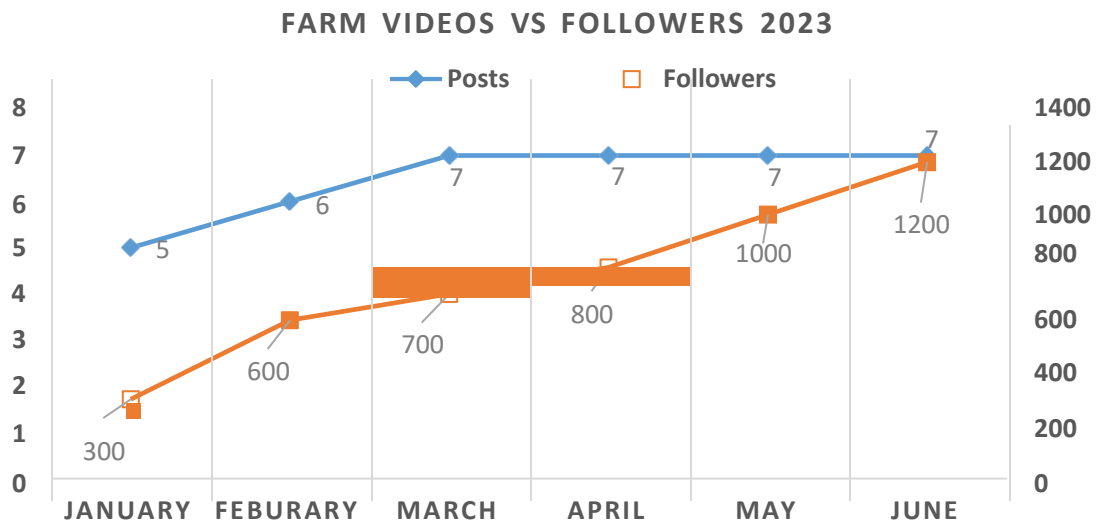


Figure 28 : (A) Facebook followers by farm posts 2023. The X-axis is a timeline, the primary Y-axis are posts, and the secondary Y-axis is the number of followers.

Figure 28 (A): The primary X-axis shows the timeline in months from January to June. The primary Y-axis denotes the number of posts per month, and the secondary Y-axis shines light on the number of followers gained in each month. Farm videos showing different activities of our daily operations was the most successful strategy on Facebook for gaining followers like on Instagram. However, the number of followers gained by this strategy on Facebook was manifolds higher than on Instagram. We owe this to a larger use range, and the majority of the users on Facebook in India are from rural backgrounds who can connect with the content instantly. The followers gained per post from the first month were around 60, and in the subsequent months, the number went up to 200 followers/post. A total of 39 farm videos were posted over six months, which gained us 4600 followers.

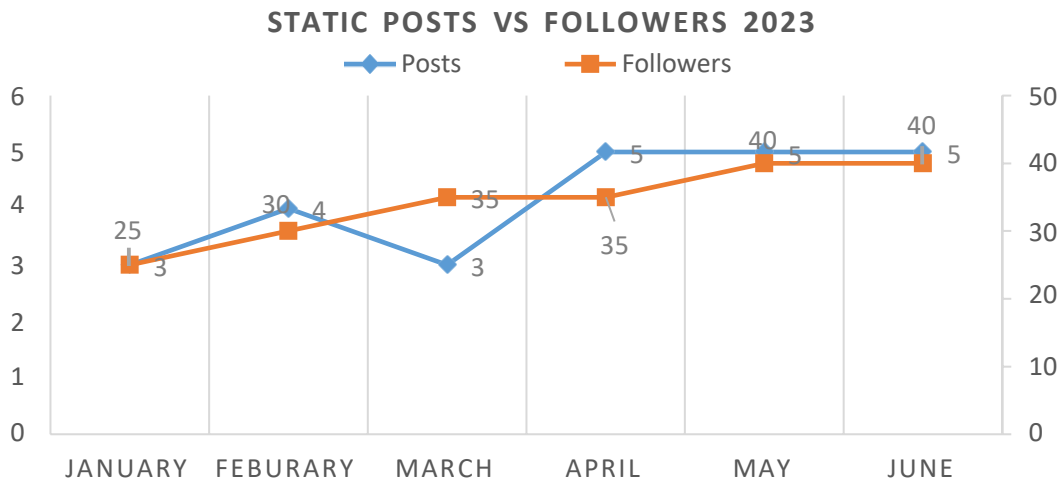


Figure 28 : (B) Facebook followers by statics. The X-axis is a timeline, the primary Y-axis are posts, and the secondary Y-axis is the number of followers.

Figure 28 (B): The primary X-axis shows the timeline in months from January to June. The primary Y-axis denotes the number of posts per month, and the secondary Y-axis shines light on the number of followers gained each month. Static posts are a necessity for social media, every brand uses them as fillers, and so do we. We made sure to make our statistics as engaging as possible to at least gain the bare minimum of followers. In six months, we posted 25 posts, which gained us 205 followers, which were somewhere around nine followers per post. The numbers were not satisfactory, so we made sure to keep the statistics count as low as possible.

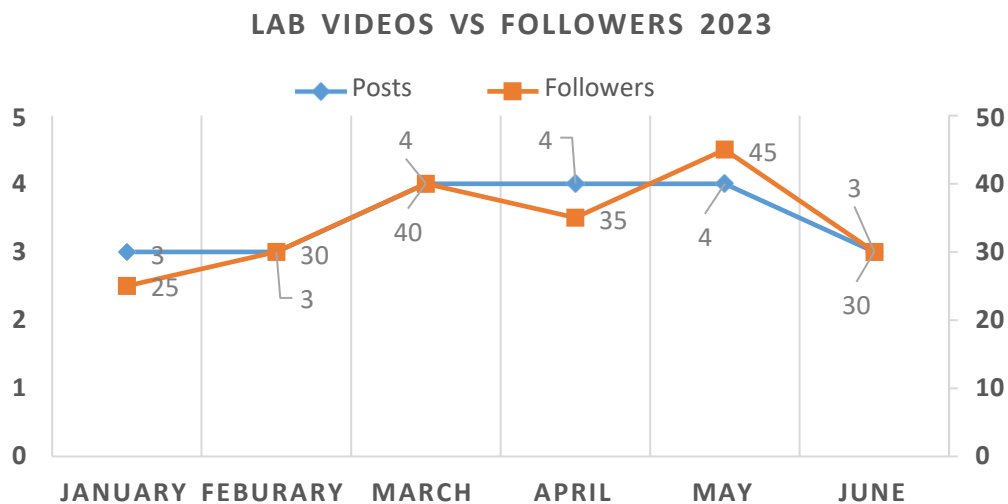


Figure 28: (C) Facebook followers by Lab videos The X-axis is a timeline, the primary Y-axis are posts, and the secondary Y-axis is the number of followers.

Figure 28 (C): The primary X-axis shows the timeline in months from January to June. The primary Y-axis denotes the number of posts per month, and the secondary Y-axis shines light on the number of followers gained in each month. Lab videos were solely posted on Facebook because the traction we got from farm videos were incredible, so we

wanted to do something novel here. We did post the same videos on Instagram, but the response was below average, so we stopped and only posted on Facebook. A total of 21 videos were posted, which gained us 205 followers which, almost 1tenfollowers per post. The Lab videos were not able to make a mark as farm videos because of the technicalities associated with them. The audience was not able to connect; maybe they did not understand what was going on. Although it looked fancy, very few people, compared to farm videos, fancied it.

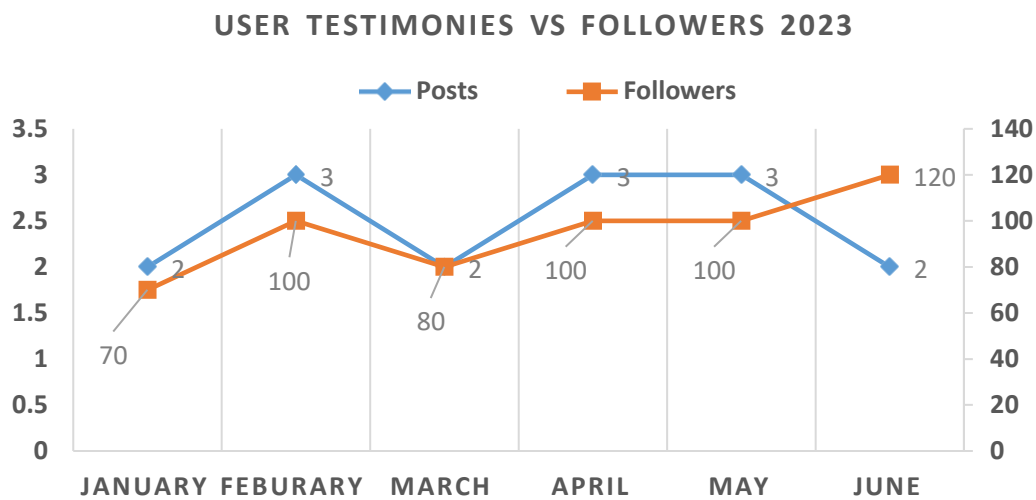


Figure 28: (D) Facebook followers by User testimonies. The X-axis is a timeline, the primary Y-axis are posts, and the secondary Y-axis is the number of followers.

Figure 28 (D): The primary X-axis shows the timeline in months from January to June. The primary Y-axis denotes the number of posts per month, and the secondary Y-axis shines light on the number of followers gained each month. User testimonies were a

relatively successful campaign on Facebook alone because of the video duration, on Instagram, the duration is limited to 1.5 minutes, which was not enough for an inexperienced user to talk about the product. The testimonies were 100% organic and recorded with authentic users. A total of 15 testimony videos were posted, which gained us 570 followers, which is 40 followers per post.

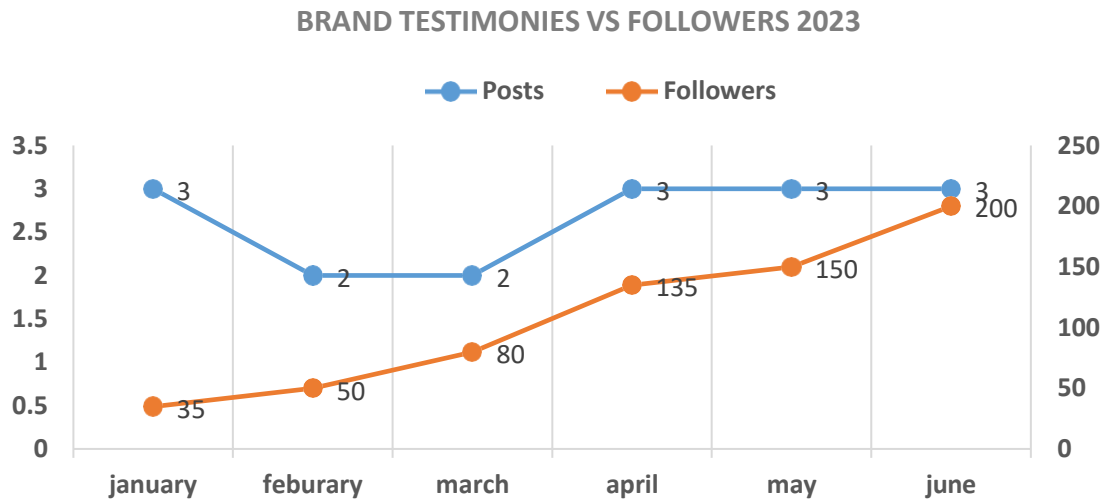


Figure 28 (E): Facebook followers by brand testimonies. The X-axis is a timeline, the primary Y-axis are posts, and the secondary Y-axis is the number of followers.

Figure 28 (E): The primary X-axis shows the timeline in months from January to June. The primary Y-axis denotes the number of posts per month, and the second Y-axis shines light on the number of followers gained each month. Brand testimonies were a kind of influencer marketing strategy wherein we collaborated with wellness influencers and

shared our products with them, and they posted testimonies if they liked the products. We are addressing an influencer’s review as testimony because there was no cost involved in this activity the products were shared on a barter basis. Moreover, the influences were strictly from nutrition, fitness or sports genera. This was a moderately successful campaign, a total of 16 posts were shared, which gained us 600 followers in 6 months, which is 40 followers/post. This strategy was more towards community building and bringing fitness associated with youth together. All in all, it is a good direction to work in.

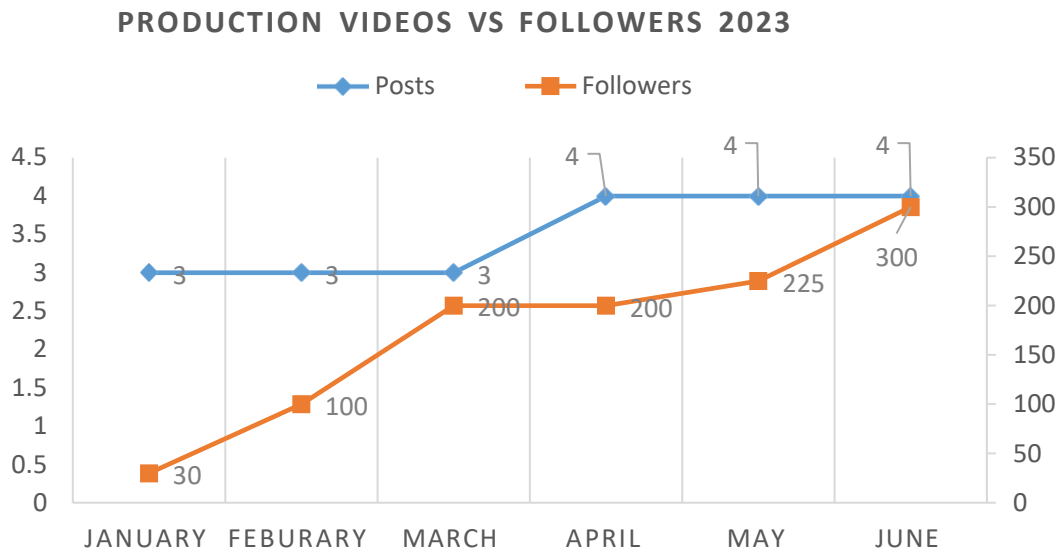


Figure 28 (F): Facebook followers by production videos. The X-axis is a timeline, the primary Y-axis are posts, and the secondary Y-axis is the number of followers.

Figure 28 (F): The primary X-axis shows the timeline in months from January to June. The primary Y-axis denotes the number of posts per month, and the secondary Y-axis shines light on the number of followers gained each month. Product benefits worked

successfully for both Facebook and Instagram, as discussed earlier, the interested audiences eagerly wanted to know more about the product. We shared a total of 21 posts over six months, which gained 1100 followers, which is 55/post.

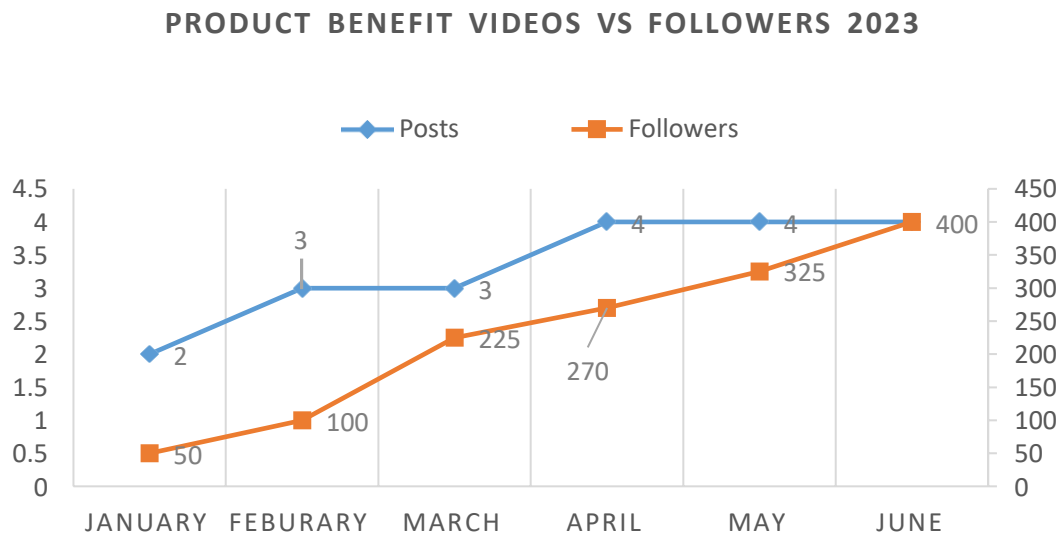


Figure 28 (G): Followers by benefit videos (The X-axis is a timeline, the primary Y-axis are posts, and the secondary Y-axis is the number of followers.

Figure 28 (G): The primary X-axis shows the timeline in months from January to June. The primary Y-axis denotes the number of posts per month, and the secondary Y-axis shines light on the number of followers gained each month. Product benefits worked

successfully for both Facebook and Instagram, as discussed earlier, the interested audiences eagerly wanted to know more about the product. We shared a total of 21 posts over six months, which gained 1100 followers, which is 55/post.

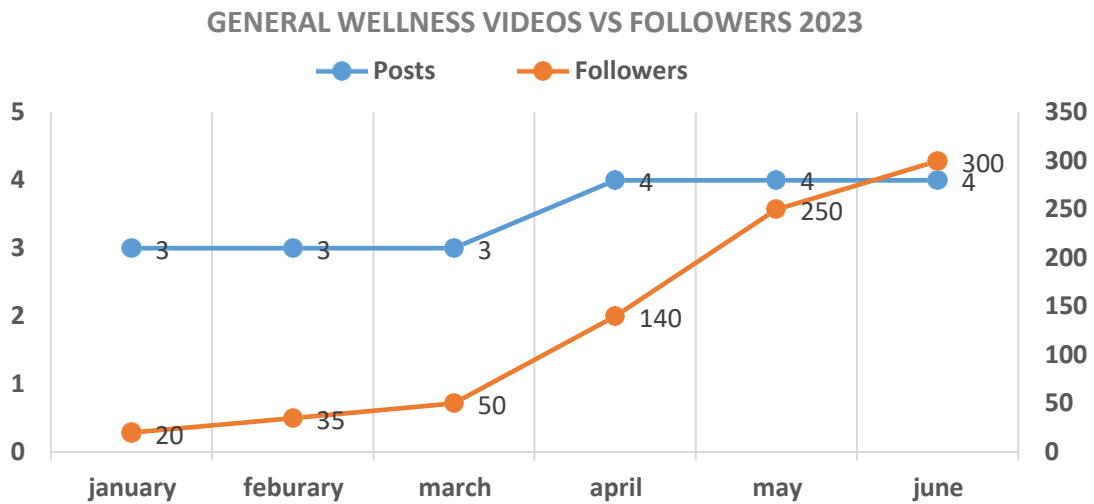


Figure 28 (H): Followers by general wellness videos. The X-axis is a timeline, the primary Y-axis are posts, and the secondary Y-axis is the number of followers.

Figure 28(H): The primary X-axis shows the timeline in months from January to June. The primary Y-axis denotes the number of posts per month, and the secondary Y-axis shines light on the number of followers gained in each month. General wellness videos were posted solely on Facebook, and here, we collaborated with budding nutritionists who were interested in medicinal mushrooms. We shared our products on a barter basis and

asked for honest reviews. First, the nutritionist would administer and then recommend it to patients. A total of twenty-one posts were posted in six months, which gained us 700 followers, which is 35/ post, moderately successful. However, through this strategy, we were able to connect with the working class and corporate people.

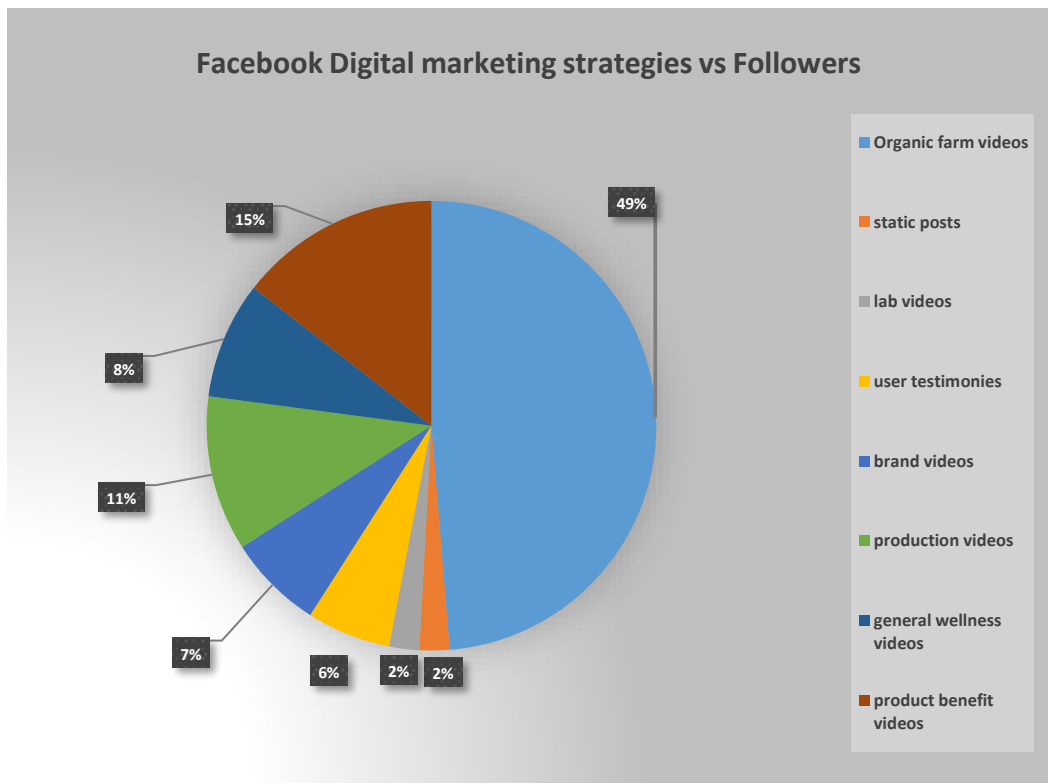


Figure 29 : Performance of different strategies for gaining followers on facebook in a span of six months

Figure 29: The performance of different digital marketing strategies for gaining followers on Facebook is shown. The farm videos were a clear winner, followed by benefit videos.

However, leaving static and lab videos, most of the strategies performed moderately well. The production videos helped us gain the trust of the audience; general wellness connected us to new corporate clients, and user testimonies helped with trust building. Conclusively, the combination of these strategies can assist a brand greatly in gaining followers on Facebook.

4.2.4 Facebook Sales Strategy

In this section, we shine a light on the strategies we used for boosting sales on Facebook. The presented data is from January to December 2023, **figure 30**, showing the total ad spend vs sales vs ROAS. Facebook, unlike Instagram, was not very successful in gaining sales. Throughout the year, we struggled with gaining a ROAS of one, which is the bare minimum for running marketing campaigns, leaving behind other costs. However, we kept trying for a year until we noticed a pattern in our follower base. The total number of followers is directly proportionate to sales. It is not true for Facebook; a brand might look very successful in terms of traction, but when it comes to sales, it's more of how many genuine consumers have been impressed.

Our Instagram has 25% of what we have on Facebook, but the ROAS generated was more than double. This means that due to the larger user base and platform algorithms, a lot of people interested in our content followed us, but it is not mandatory that if a person is watching our content, they will be interested in our merchandise. In the entire year 2023, a total of 1.3 million INR was spent on Facebook ads, which generated a revenue of 1.25 million INR overall we faced a loss of 50K INR. So, it is not recommended to boost nutraceutical sales on Facebook.

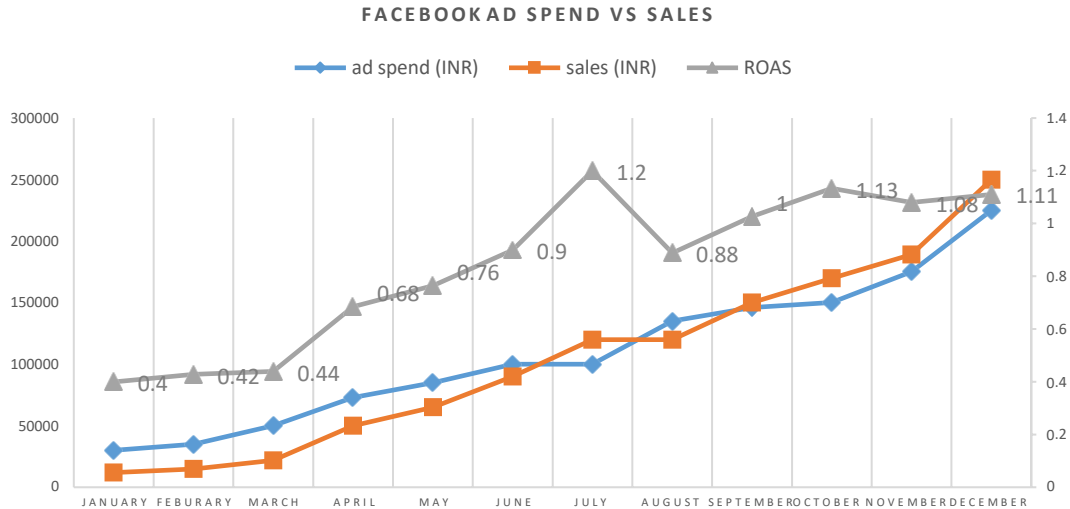


Figure 30 : Facebook sales vs ad spend vs ROAS 2023. X-axis is the timeline primary Y-axis is the spend and secondary Y-axis is the ROAS generated

Figure 31 (A), (B): demonstrate detailed analysis of sales (primary Y-axis) vs ad spend (Y-axis) vs ROAS (A,) and Conversion Rate (secondary Y-axis) through the two most successful strategies, farm videos. Farm videos were extremely successful on both Instagram and Facebook in gaining followers, but in terms of sales, they performed well on Instagram, but on Facebook, they struggled throughout the year. The maximum ROAS we could generate from farm videos was 1.23, that too after 6 months of constantly running ads. A total of 1 million INR was spent on ads, which generated a revenue of 1 million INR, exactly 1 ROAS. A similar pattern was observed with product benefit videos wherein a total of 3,00,000 INR was spent, which generated a revenue of 250,000 Indian Rupees. A similar phenomenon was observed with conversion rates where not more than 15% was recorded for either of the strategies. Conclusively, in PlantBro’s case, Facebook did not perform as per expectations.

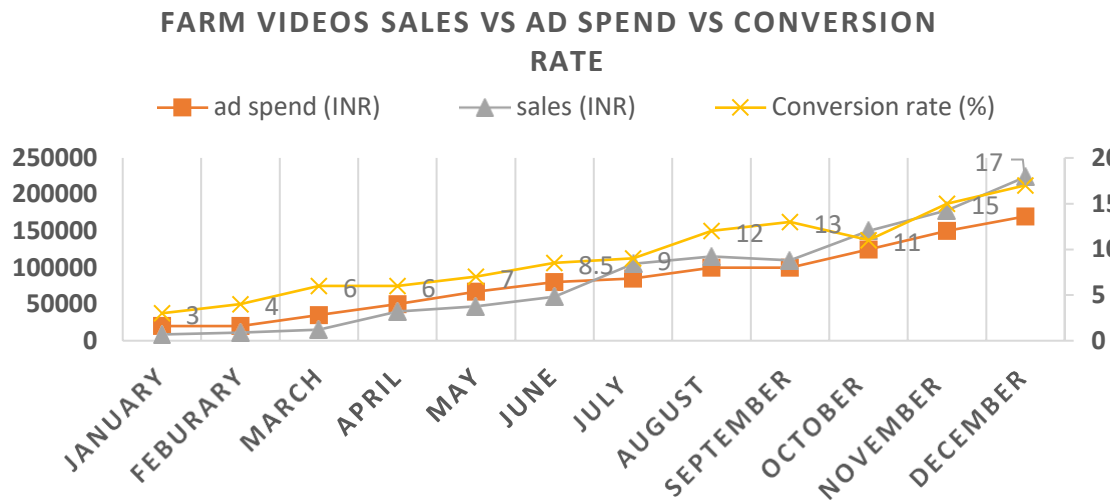
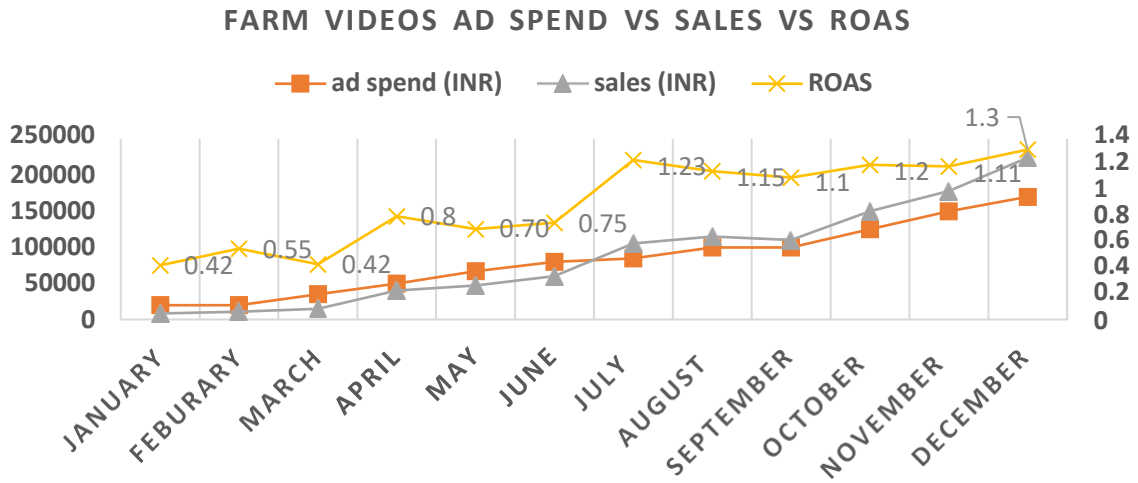


Figure 31 (A, B): ROAS and Conversion Rate through farm video posts, X-axis is the timeline, the primary Y-axis is the total spending, and the secondary Y-axis is the ROAS and Conversion rates



Figure 32: Visual representation of Farm videos and their impact on revenue and sales.

4.2.5 Insights from PlantBro's Head of Marketing Dr. Atul Sharma

In this section, we shared insights from digital marketing strategy the Head of Marketing Department at the PlantBro Life Sciences, Dr. Atul Sharma. He is a pioneer in performance marketing and works with PlantBro as a co-founder. Dr Sharma's views can be of great significance for start-up founders in the nutraceutical sector because he has provided a hawk's eye view of the constraints and their workable solutions. He has also explained in detail how social media can be your friend and foe when working for brand popularity and sales. One point he emphasized was that strategies effective for gaining followers rarely work for driving sales. We questioned him on different parameters like the importance of Facebook and Instagram, the current scenario of mushroom-based products, the standing of PlantBro and many others following is his opinion on the medicinal mushrooms, nutraceutical market and digital scenario.

Medicinal mushrooms in the 2020s were a completely novel domain for the Indian market. There was a lot of scope, and the demand was rising due to increased interest in nature-based products.

Digital Marketing (DM) is a silver bullet for brands with low resources as it allows them to be constantly in touch with their audiences through Instagram and Facebook. It's also noteworthy that one viral post can popularise a brand 1000X faster than any other physical strategy. Most start-ups, especially in the nutraceutical domain, showcase their formulation preps, which lures the audiences and builds trust in the brand. For PlantBro, as we are an Agri-driven company, DM has helped us immensely in making a mark in the NM through Instagram and Facebook.

When it comes to social media platforms like Facebook and Instagram and nutraceutical-based start-ups, the domain is popular among the youth. They are more inclined towards Instagram. Secondly, the options available on Instagram for creating a post thirdly, the number of influencers on Instagram is way higher than on Facebook, and the virality factor on Instagram is greater too, which holds power to get its next 2-year goals in an instant. Numerous brands have gained their popularity overnight due to being viral. The trust in a brand can only be inculcated by its product and services, but the chance to show its merchandise can be availed by popularity. So Instagram is better for start-ups on the whole.

Medicinal mushrooms were completely alien to the market; social media has helped greatly in case of awareness, Instagram especially, by indulging a specific influencer for a specific domain, say a fitness guy/girl for fitness freaks or a dietician or nutritionist, it becomes comparatively to connect with people with similar interests. The same strategy could be followed for different products and different audiences. Spreading awareness physically is tedious, but the results can be seen instantly by the audience's reaction. But in social media, the results are seen after a week or more. For Us, awareness is still the narrowest bottleneck because people from the middle and lower classes are still inaccessible. In India, a start-up is required to sell their products in large volume to be profitable as the audiences are highly price conscious. We are working towards it by reducing our pricing and organising corporate events to promote mushrooms physically. Influencer marketing and affiliate marketing are also key players.

PlantBro Life Sciences is a bootstrapped company, and the only funding we have received is in the form of grants from the Government of India. Thus, we are completely debt-free, and after a 3-year struggle, e-profits are on our way. Today, PlantBro is considered respectable in the medicinal mushroom. Domain and people have shown their immense interest in our content, products and events. Today, we proudly say that Plantbro is a recognised brand amongst nutraceutical enthusiasts.

Influencer marketing (IM) is the remedy for start-ups in the Nutraceutical Market to make a mark, but the costs of the same are skyrocketing because of the growing popularity and

fan culture in India. For start-ups, there are multiple options like barter IM, affiliate IM, commission IM, User Generated Content IM and low-cost IM. We at PlantBro focus on UGC, Barter and low-cost IM and the results are reasonable. The bigger picture is with brands with external funding wherein they spend heavily on giant stars from Bollywood to capture the market. The influencer community is very specific about their category, and there are no regulations on influencers about the products they endorse, so bigger brands hire the most popular faces and make them claim things that brands couldn't have claimed at any cost. IM involves hefty capital but ensures a brand's success.

PlantBro's clicking moment was the organic farm videos and our product videos from our founder, that was when we hit the right nail it's amazing how the audience liked someone they had never seen before, and more than like it was the trust they showed we not just made Instagram presence, but we doubled our sales.

4.3 Qualitative analysis of Facebook, Instagram & YouTube Strategies

In the previous section, we exclusively talked about PlantBro Life Sciences and how they made their presence on social media and used it to generate sales. After interviewing Dr. Sharma, we acknowledged the plethora of strategies that were being used and improvised by brands of different categories to gain traction. In this question, we present a qualitative comparison of strategies used by brands of different categories on Facebook and Instagram, e-commerce platforms like Amazon and Flipkart and v-video sharing platforms like YouTube. Whilst interviewing Dr Sharma, we acknowledged that a considerable number of brands have secured external funding on an equity basis, which has skyrocketed their digital marketing budget through which they collaborate with highly pricy influencers.

In the first stage, we compared social media strategies and considered a total of seven brands, including PlantBro. Amongst these seven brands, Kapiva, Plix, Man Matters, Wellbeing Nutrition, and Oziva were externally funded, while PlantBro Life Sciences and Rooted Actives were bootstrapped.

4.3.1 Instagram & Facebook strategy

Brand	Strategy	Campaign type	Influencer type	Conversion rate	External funding
PlantBro	Organic farm videos	paid ads, farm reels and story	No influencers	Low	No
	Product benefit videos	Statics, Paid ads, testimony reels	No Influencers	Medium	
Kapiva	Bollywood fitness stars	Celebrity Statics, paid ads, stories	Bollywood stars	Extremely high	Yes
	Top fitness female influencers	Influencer reels , testimonies & stories	Struggling Bollywood stars	Very high	
Wellbeing Nutrition	Novel technology	Statics , reels, paid ads	Doctors, Yoga trainers, Ayurvedic practitioners	High	Yes
	Client testimonies	Paid ads, reels, stories	Medium scale actors	High	
Man Matters	Male fitness models	Reels, boosted testimonies, stories	Top body builders	Medium	Yes
	Product user videos	Boosted Testimonies, paid ads	Top nutritionists	High	
Oziva	Formulation details	Statics, animated videos	Medium scale influencers	Low	Yes
	Scientific proof	Lab reports statics, influencer reels	Medical practitioners	High	
Rooted Actives	Low cost influencers	Influencer reels, static paid ads	New influencers	Low	No
	Medium cost influencers	Videos, statics	New influencers	Low	
Plix	Top female influencers	Paid ads, glamorous videos, reels	Fashion, lifestyle influencers	Very high	Yes
	Glamorous female influencers	Reels, paid ads, statics	Fashion lifestyle influencers	Very high	

Table 2: Different digital marketing strategies followed by Indian brands on social media based on their resources

Table 2 depicts various social media strategies followed by top nutraceutical brands in India. Mostly, the brands utilize influencer marketing wherein a person with a high social media following advertises the merchandise to popularize it. We have explained each brand's strategy based on campaign, influencer, conversion rate and eternal funding. We have only listed the strategies that have worked the best for these brands.

In the case of Kapiva, which is an externally funded brand that works on modernized ayurvedic formulations, collaborations with Bollywood actors and top fitness influencers worked the best. It involved extremely high costs, and the traction they got in return was equally immense. The major campaign types used were celebrity statics, boosted videos and testimony videos.

Wellbeing Nutrition is also an externally funded brand that works on novel technology of strips and has converted liquid ayurvedic formulations to mouth-melting strips. They also collaborated with celebrity influencers but from a lower class. Alongside, they joined hands with healthcare professionals like yoga trainers, ayurvedic practitioners and medical doctors, who helped greatly in pushing their sales.

Man Matters is a very interesting brand that works specifically for maintaining men's health. The strategy that worked best for them was collaborating with top bodybuilders in the country to influence new people who want to start any sort of fitness regime. The strategy was moderately expensive, but the results were great. Oziva is a technology-driven brand, and dissimulations are an actual amalgamation of Ayurveda and pharmaceutical sciences. They collaborated extensively with dieticians, medical practitioners and medium-scale influencers to boost their products.

PlantBro and Rooted Actives are similar brands and work on medicinal mushrooms based on Ayurvedic formulations. In the case of PlantBro, their organic videos and founders' explanatory videos worked the best. Rooted actively collaborated with local influences and followed a similar strategy as Kapiva and well-being nutrition but at a very low cost. They have not made their mark in the market as of now.

4.3.2 YouTube Strategy

Brand	Strategy	Campaign type	Influencer type	Conversion rate	External funding
PlantBro	Short farm videos	Channel videos	Founder led videos	Low	no
	Awareness videos	Channel videos	Founder led videos	low	
Kapiva	Ayurvedic Consultants	Shorts, paid non-skippable ads, 5-sec ads	Ayurvedic doctors	medium	Yes
	Free consultation with nutritionists	Shorts, channel podcasts, paid ads	nutritionists	Very high	
Wellbeing Nutrition	Novel technology	Shorts, channel videos	Medium scale actors	High	Yes
	Client testimonies	Paid ads, shorts	Medium scale actors	High	
Man Matters	3 rd party vlogger collaborations	Shorts, paid ads	3 rd party vloggers	Medium	Yes
	Product user videos	Testimonies, paid ads	Top nutritionists	High	
Oziva	Formulation details	Shorts, skippable ads, 5-sec ads, podcasts	Scientists, biotechnologists	Low	Yes
	Podcasts,	Non-skippable ads, Podcasts	Medical practitioners	High	
Rooted Actives	Awareness videos	Shorts, paid skippable ads	New influencers	Low	Yes
	Medium cost influencers	Shorts, skippable ads	New influencers	Low	
Plix	Top female influencers	Shorts, non-skippable ads	Fashion, lifestyle influencers	Very high	Yes
	Glamorous female influencers	Paid ads, skippable ads	Fashion lifestyle influencers	Very high	

Table 3 : YouTube strategy comparative chart of Indian brands based on their resources

YouTube has played a pivotal role in the establishment of nutraceutical brands in India. As per our qualitative research, brands like Kapiva and Wellbeing Nutrition consider it as important as Instagram for generating sales. At the same time, bootstrapped brands refrain from YouTube because of the heavy costs associated with it. In the case of PlantBro and Rooted, we see very little activity on YouTube because the number of products is less, and the type of videos these brands leverage from is not given adequate weightage. The remaining brands such like Oziva, Man Matters and Plix fall in the middle of the spectrum and use YouTube moderately.

Kapiva is a YouTube giant. Their YouTube subscribers are over 100K, and they aggressively advertise on videos. Their most prominent strategy has been 5 secs - skippable ads wherein they very subtly explain their products through Dieticians and fitness influencers. Another equally important tactic is their videos with Ayurvedic consultants who explain about one ailment at a time and associate a respective product with it, these videos are channel videos almost 8-10 minutes long. They spend moderately on YouTube. Wellbeing Nutrition is on similar lines and uses a similar strategy, but the only difference is their client testimonies. They spend moderately on YouTube.

Oziva, Man Matters and Plix spend more than PlantBro and Rooted but less than Kapiva and Wellbeing Nutrition. Table 3 suggests Oziva uses their novel formulations as the content of their channel videos and invites biologists and medical practitioners on their podcasts to relate a particular benefit with a respective product. Man Matters is about masculinity, so they make their YouTube content with bodybuilders both prominent and budding. Additionally, they spend 5 secs non-skippable ads on 5 secs. Plix is a

comparatively new brand and sells the idea of a cool life. They mostly collaborate with glamorous influencers and fancy a blingy lifestyle through their new-age nutraceuticals. PlantBro and Rooted are the least active on YouTube because of the cost bracket. PlantBro has its own YouTube channel and posts about founder-led videos or organic farm videos, but the traction is not satisfactory, and neither are they working hard towards it. Rooted is also present on YouTube but their activity is minimal.

4.3.3 E-commerce Trends of Amazon India and Flipkart

Brand	Strategy	Campaign type	Conversion rate	External funding
PlantBro	Farm videos and testimonies	Sponsored ads and video on first page.	high	no
	Product placement, ranking	Banner ads, keyword bid and searching	medium	
Kapiva	Videos and banners, product placement	Sponsored product, top banner videos, videos on competitor pages	high	Yes
	Multiple videos on first page	Multiple sponsored videos, top banner video	Very high	
Wellbeing Nutrition	Formulation detailing	Sponsored banners and competitor page banners	High	Yes
	Lab reports	Sponsored video	High	
Man Matters	Detailed infographics, sponsored product placement	Sponsored videos & product ranking	Medium	Yes
	Product user videos	Sponsored videos on competitor's page	High	
Oziva	Detailed Formulations	Sponsored videos and top banner videos	Low	Yes
	Scientific proof & certifications	Banners on competitor's page	High	
Rooted Actives	Sponsored videos	Sponsored videos on first page	Low	Yes
Plix	Top product placement	Sponsored videos and banners	Very high	Yes

Table 4: E-commerce trends in the Indian market

Table 4, E-commerce is the actual playground of nutraceutical brands in India. As per our study

Kapiva and Wellbeing Nutrition spend the most on Amazon through video banners, sponsored product placement, keyword bidding and videos on competitors' page campaigns. Wellbeing Nutrition additionally ensures top banner posts on product search pages. The strategies followed by these brands cover all aspects and post types. Their spending on Amazon India is higher than on Flipkart because the latter is not as popular. The most expensive campaigns are the first page banners and sponsored product placement. Keyword bidding can also be equally expensive if the product category is common. These brands spend heavily on E-commerce but ensure a ROAS of at least 2.5 to be at quits with operational costs.

Man Matters, Oziva and Plix lie in the same category where they spend more than PlantBro but less than Kapiva and Wellbeing Nutrition. Man Matters focuses on highly detailed Infographics through their A+ content and sponsored product placement. The product placement strategy helps Man Matters the most because mostly their products are a blend of numerous Ayurvedic herbs, so keyword bids are higher for some but lower for most of the ingredients. This gap in the prices of keywords helps with correct product placement. Additionally, in multi-ingredient formulation, the product will show when any of the ingredients are searched. Through this strategy, Man Matters keeps up in the first ten products on the first search page.

Oziva focused on product details, presented as informative content through detailed formulations and certifications. They extensively endorse their scientific backup and client testimonies. They shorten their podcasts and show edited videos on Amazon India. Plix

also spends heavily on E-commerce, being a comparatively newer brand, it has achieved equal strength among its categories. They very fondly use sponsored video ads on the first search page, videos on the petition page and top product placement.

PlantBro has recently become profitable through both Amazon India and Flipkart by generating a profit of more than a million INR on Amazon alone. Since we began using high keyword bidding, sales numbers have started to increase. We spend 60%-70% on sponsored product placement because we are into selling niche products, and medicinal mushrooms are not as popular as other ayurvedic herb, which we will discuss in the next question. However, we try our level best to highlight our product wherever we can. Another strategy we use is to run testimony videos on the first page, which accounts for 20% of our spending. The remaining 10 % is allocated to demonstrate our products on our competitor's page.

Through this question, we gave insights on different social media and E-commerce strategies used by nutraceutical brands in India. Summarizing the qualitative findings, we come to conclusion that Instagram outperform Facebook in gaining both followers and sales. On Instagram, the most popular and o-target strategy is influencer performance marketing. Amazon is crucial for the establishment of the brand, while Flipkart is secondary but essential for building trust in the brand through its listing. YouTube is a playground for big players, and unless and until we are adamant about building a dedicated channel with regular posts, we should not look up to it for branding or sales.

4.4 Survey on Nutraceuticals

In the previous sections, we talked profoundly about brands and their digital marketing strategies and how these strategies helped them make a mark in the market. Herein, we will look at the nutraceuticals in general from consumers' perspective, and in this quantitative

survey. We will shade light on consumer behavior towards nutraceuticals and mushroom (Fungi) based nutraceutical products.

To elucidate the consumer behavior towards nutraceuticals in general and specifically for fungi-based products, we surveyed 150 participants in the heart of Gurgaon city, which is also an information technology hub of north India. We chose this location to come across the most progressive section of society. The survey involved 150 participants divided into four age groups: 15-30, 30-45, 45-60 and 60 plus. We selected 45 people aged 15-30, 35 people aged 30-35, and 35 each from 45-60 and 60 plus age groups, respectively. We specifically selected people who were enthusiastic about nutraceuticals and knew about their benefits. The maximum number of people were from the 15-30 age group because the data suggested that the majority of the buyers were from this age category, followed by the 30-45 age group. However, an interpretative representation of the physical survey is also presented. The sample size of 150 people was adequate for quantitative survey-based research, and the homogeneity of the samples was maintained accordingly.

4.3.1 Public Opinion on Nutraceuticals

In the first round of the survey, we questioned our participants about what they know about nutraceuticals and how they perceive them, **Figure 33**, as health-supporting products or as just another pill that needs to be administered because the doctor advised it. It was a real delight to record that 75% of the people from the 15-30 age group administered some sort of nutraceutical, and 20% were on the verge of starting. It was great for the industry because here we were, looking at our potential buyers. Next, in the 30-35 age group, the results were even better 80% of the participants were taking nutraceuticals, but interestingly, only 5% of the people were on the verge of starting, and 15% of people did not use nutraceuticals.

For the 45-60 age group, 45% of the people were already using nutraceuticals, 35% were considering them, and 20% had no plans to consume them. These results were quite astonishing because in the 45-60 aged group were those who provided insights into Ayurveda formulations and its consumption. We further questioned this group and found that they prepared their medications and consumed them accordingly. India is a country with a lot of homemaker mothers, whose knowledge of Ayurveda stems from generations. They tend to trust their own knowledge, rather than adopting the new nutraceutical products. A similar pattern was observed in the 60 plus age group, where 50% of the people used nutraceuticals, 40% may use them in the future, and 10% had no plans to consume them. A similar approach to the 45-60 age group could be applied here.

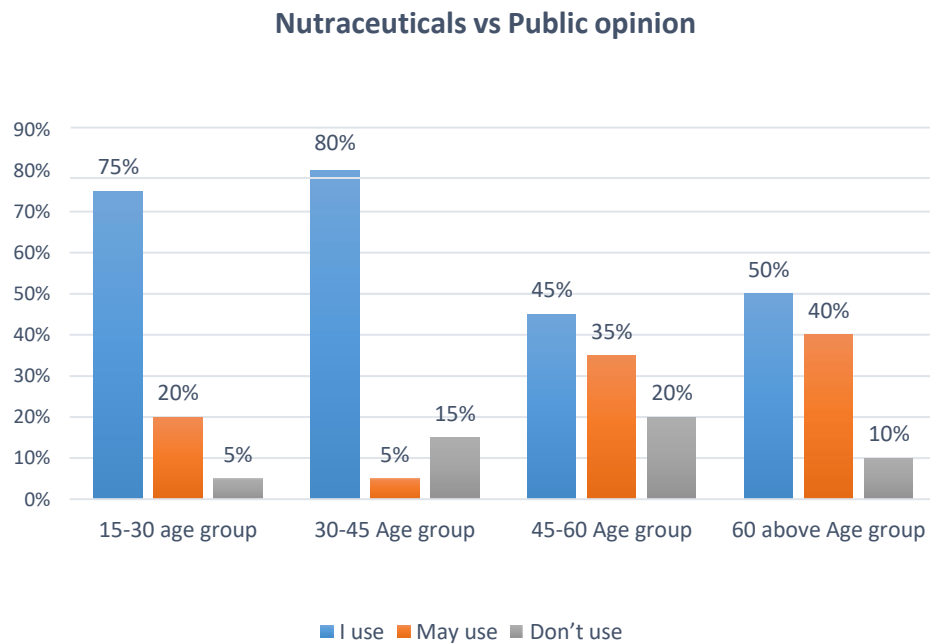


Figure 33 : Public opinion on nutraceuticals

4.3.2 Comparison of new age nutraceuticals with traditional formulations

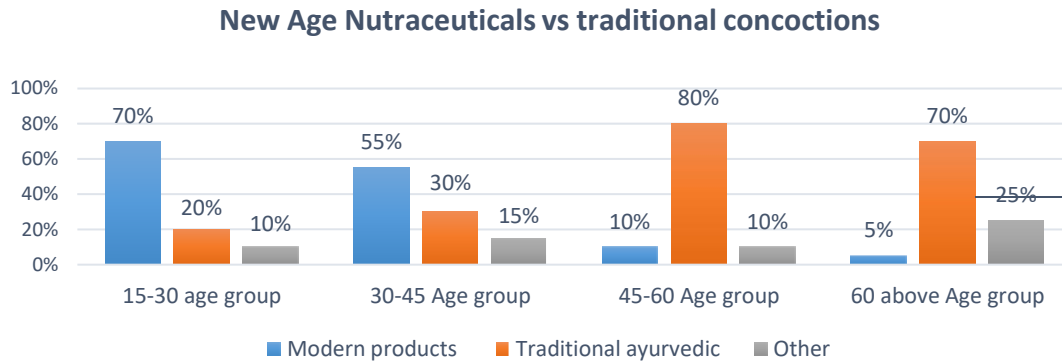


Figure 34 : Public opinion on new age nutraceuticals Vs traditional formulations

In this section, we tried enquiring about the penetration of new-age nutraceuticals in Indian society. For the 15-30 age group nearly 70% relied on new-age nutraceuticals, which is in line with the previous question, where 75% of the population administered some kind of nutraceutical. However, 20% of the people from this age group relied on traditional formulations, and 10% had no history with either of these. For the 30-45 age group, 55% administered new-age products, whilst 30% relied on traditional products, and 15% refrained from either of these. This pattern confirms the fact that Ayurveda is deeply embedded in Indian society, and traditional concoctions are not as primitive as the brands today portray them. A handsome chunk of the society still believes in traditional ayurvedic formulations.

The 45-60 age group, like in the previous question amazed us by the fact, that only 10% of them used new-age nutraceuticals, and 80% were hooked to traditional formulations.

We were expecting a spike in the number of people using traditional formulations, but 80% was just over the top. This proves our theory of ancestral knowledge transfer. Only 10% of the people did not use any of these products. Moreover, this made us question deeper into consumer psychology, and we asked the volunteers if it is not possible to prepare all required formulations at home, so what did they do in such circumstances? They instantly answered we look towards ayurvedic giants like Himalaya Ayurveda, Patanjali Ayurveda, Dabur India etc. These brands are the pioneers of Ayurvedic medicines in India; they are solely focused on formulations mentioned in the ancient scientific texts and avail them consumers as it is with no changes. This is the reason why middle-aged volunteers relied more on traditional formulations than new-age products. A similar pattern was observed for the 60 plus age group, where 5% of people used new-age products, 70% used traditional and 25% refrained from these products.

4.3.3 Public Opinion on Mushrooms

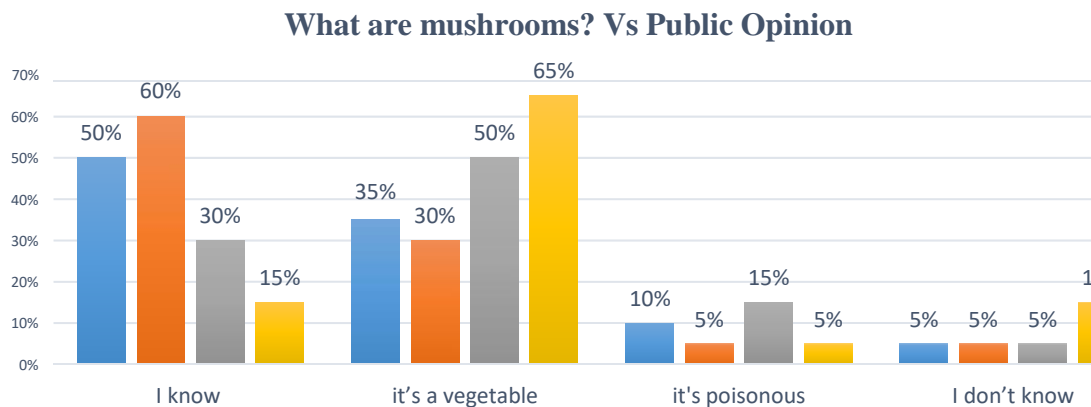


Figure 35 : Public opinion on mushrooms in general

In this section of our survey, we enquired about the take of our volunteers on mushrooms, what they think of them, and how they are used in their daily lives. In the 15-30 age group, 50% of the people knew about mushrooms and their medicinal uses, 35% people thought it was vegetables, amazingly 10% people thought they were poisonous, and 5% people had no clue about what mushrooms are. These numbers were quite satisfying as mushrooms are not extremely popular in India; 50% of people knowing the details of mushrooms, like their medicinal benefits, indicate an effective awareness process. In the 30-45 age group the response was even better: 60% of people knew about mushrooms in detail, 30% thought it was a vegetable, and 5% each thought it was poisonous and had no idea.

In the 45-60 age group 45-60, 30% of the people knew about mushrooms in detail, and 50% thought they were vegetarians. We were anticipating these numbers because 45-60 age group are still governed by orthodox Indian societal norms, and as per superstitions, mushrooms in Indian society are a product of dirt, and there are certain sects of the society who completely abstain from them. Next, 15% of people thought they were poisonous, and 5% of people had no idea about what they were. In the age group 60 and above we recorded 15% knowing about mushrooms and 65% thinking they were vegetables. These numbers were expected because most 60 years and above people are consulting a doctor, and due to the popularity wave of mushrooms, the doctors might be prescribing them to their patients. So, most people consume mushrooms but have no idea of what they are. However, the share of people thinking mushrooms to be poisonous was highest in this category, 15%, and the same number was recorded for people who didn't know about mushrooms.

4.3.4 Fungal Nutraceuticals Vs Public Opinion

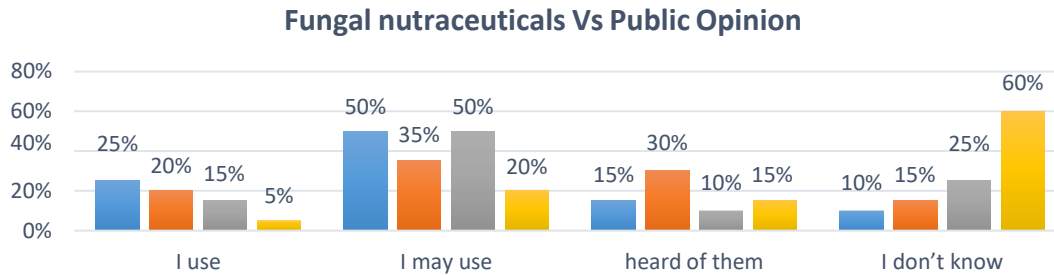


Figure 36 : Public opinion on fungal nutraceuticals

In this section of our survey, we looked at how our volunteers perceived fungal nutraceuticals. In the age group 15-30 years, we recorded 25% of people who were using some kind of fungal nutraceutical, may it be probiotics or medicinal mushrooms. A whopping 50% was recorded for people who might use these products in future. Around 15% of the people had heard of medicinal mushrooms, and only 10% of people said they did not know the topic. For age groups of 30-45 years, 20% agreed on consuming some mushroom-based products, and 35% of people were interested in such products. These numbers were descent considering orthodox societal norms in India. Around 30% of the people were recorded to have heard of such products, and 15% of people said they were not interested. These numbers were quite convincing as in the age group 15-30 years, 75% and 30-45 years, 55% people were interested in mushroom-based nutraceuticals.

For the age group 45-60 years 15% of people were seen consuming mushroom products, whilst 50% were interested in exploring them. A 10% share of the age group quoted on hearing of them and 25% of people were documented as not knowing about mushroom-based nutraceuticals. A similar trend was noticed for people lying in the 60 and above age

group, where 5% of people used, 20% may use, 15% heard of, and 60% had no idea about what medicinal mushroom-based products were. These numbers were expected due to a lack of awareness in the age groups due to the generation gap and religious beliefs.

4.3.5 Public Opinion on Cordyceps Militaris Mushroom

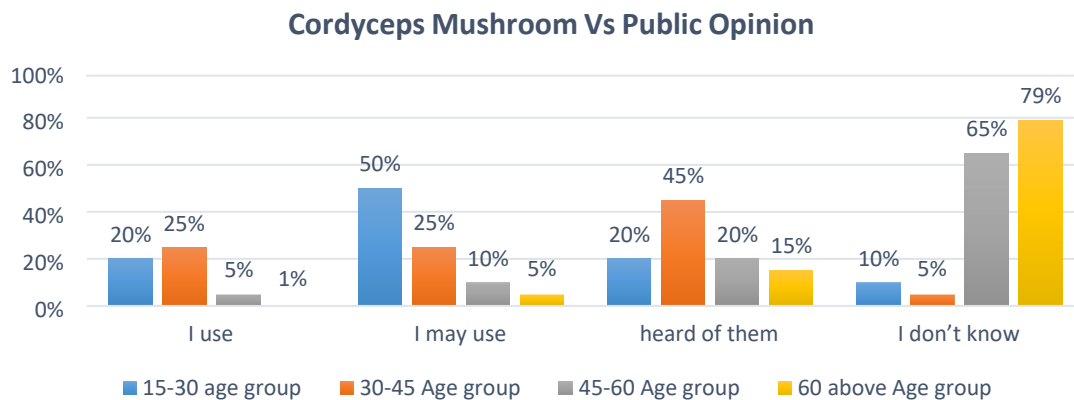


Figure 37 : Public opinion on cordyceps mushroom

In the section, we documented the popularity of Cordyceps mushroom, which forms the basis of PlantBro Life Sciences amongst our volunteers. In the 15-30 age group, 20% of people used it, while 50% wanted to use it in future. A 20% share of the total had heard about cordyceps and 10% had no idea about it. These numbers were quite pleasing for us and we owe it to the rising gym culture and globalization of the same. Among 20% of users, 90% stated that they first started using it on their fitness trainer’s advice in the gym. For the 30-45 age group, 25% of people were recorded using cordyceps on recommendation by their physicians, another 25% were interested in using it, 45% had heard of the product, and 5% had no idea. These numbers were higher than we were expecting. As per PlantBro’s first survey in 2020 the numbers have increased by half.

For the 45-60 age group, we saw only 5% of people using mushrooms, while 10% were actively interested in the product, 20% had heard of it, and 65% had no idea about what it was. A similar trend was seen for people over 60 years old: 1% used it, 5% were interested, and 80% had no idea about what it was.

4.3.6 Public Opinion on Fungi Based Brands

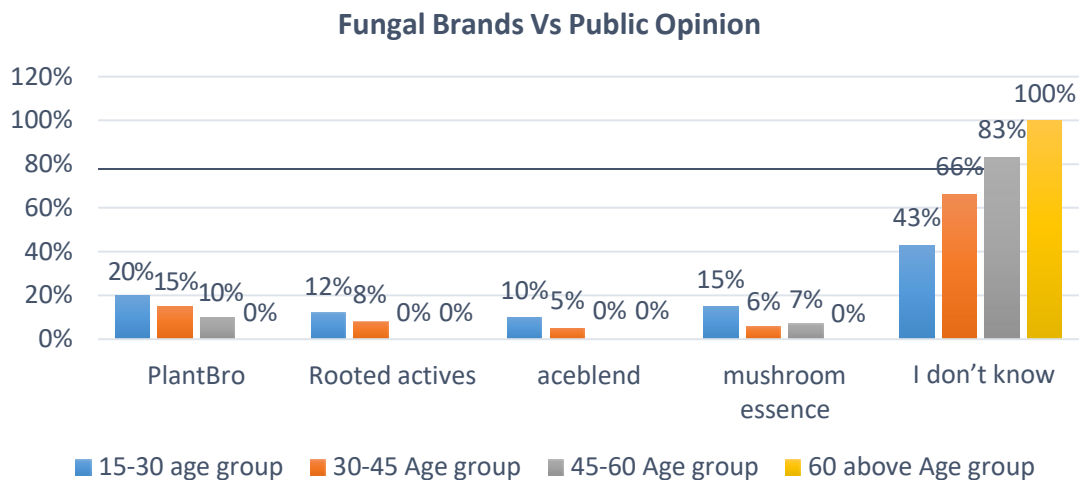


Figure 38: Public opinion on fungi-based brands

In the last section of the survey, we evaluated the brand popularity amongst our volunteers. For the study, we considered four brands, namely PlantBro Life Sciences, Mushroom Essence, Rooted Actives and AceBlend. In the case of the age group 15-30 years, 20% of people knew about PlanBro, 12% about Rooted, 10% about Ace blend and 15% about mushroom essence, whilst 43% of the population had no idea about any of these brands. In the 30-45 age group, 15% knew about PlantBro, 8% about rooted, 5% ace blend, 6%

mushroom essence and 66% had no idea. We considered these good numbers because 30% of the youth were aware of the mushrooms and the brands selling them. A 20% popularity level for PlantBro is convincing for a bootstrapped brand, it directs towards efficient marketing both online and offline. For the 45-60 age groups, the popularity was low, and it was expected that a similar trend was noticed for 60 years plus volunteers.

Through this survey, we shed light on the public opinion about nutraceuticals and how they have affected different age groups in society. The startup companies can apply the results of this survey to target an audience and learn how to address a question for their survey.

4.5 CEO Interviews

This is the last question of our research, and here we elucidate the views of Chief Executive Officers (CEOs) of four startups in the nanotechnology-based nutraceutical industry. CEO 1 is the most senior of all and has spent more than 35 years in the industry as a production manager, sales executive and strategy consultant for major Ayurveda-based brands in India. He has self-witnessed the origin, expansion and transformation of the industry in terms of production, marketing and strategies. Currently he is working with Shiv Shakti Mushrooms (P) Limited, New Delhi. CEO 2 is comparatively younger and has spent about 20 years in the domain of marketing. He stands strong in his views on the revolutionized digital marketing arena and works as a chief marketing officer, he is working with Mushroom Essence, Dehradun. CEO 3 and 4, young founders from the present generation, are loaded with technological insights and the how the scenario has become impeccably dynamic and act as Chief technical and marketing heads of their startups and are working with Cosmic Cordy, Faridabad and JalVayu mushrooms, New Delhi.

We prepared a common questionnaire, which was presented to all the CEOs, and their views were recorded. Through this question, we intend to address the gap between the actual understanding of the digital scenario and myths prevailing in the market and the scope of nanotechnology-based companies. The following are the opinions of each CEO on the questionnaire.

Why a nanotechnology-based startup? CEO 1 was very clear about the idea that the nutraceutical domain of India needs to be revolutionised through technology and requires novel formulations. CEO 2 sounded a little opportunistic and wanted to cash in on the gap between customer demand and the availability of products in the market. CEO 3 was adamant about how old orthodox products have bored the consumers, and after decades of use through generations, no concrete benefits are noticed. CEO 4 had an interesting take. Life is constantly changing for the worse, and life has become too stressful, so the nutraceuticals needed to be geared up, and we did it with nanotechnology. All in all, they all wanted novel technology in the nutraceutical sector of India.

Do these products work? CEO 1, being from a scientific background and a doctorate in pharmaceutical design, was clear that in nano-based nutraceuticals, the efficacy is enhanced manifold, and these products leave negligible residue compared to conventional Ayurvedic products. CEO2, a management company, started taking numbers wherein more than 80% of the people reciprocated positively to products whilst 10% had some issues. CEO3 was almost convinced as his technical insight was not as strong. CEO4 was enthusiastic about the technology but had very little knowledge of how these products worked.

Is the Indian market supportive? CEO1 was sure about the target audience and pointed towards the millennials and Gen Z as the potential buyers; the middle-aged people were too sceptical to accept novel formulations, and the senior citizens were even firmer. However, the medical practitioners can play a vital role here by recommending it to their patients. The market is never supportive until unless they understand the product. All other CEOs were convinced with the same answer. The market is strong for novel nutraceuticals, but initially, a brand needs to focus completely on its awareness drive.

What is the digital scenario like in the nutraceutical domain? CEO 1 was not very happy with the situation he commented on the misuse of social media and how wrong information was provided to the audience. He also pointed towards factual alteration and the extent to which influence marketing was being used to popularize a given product. CEO 2 was also on the same lines and addressed the scenario as capitalized. As per his perception, the digital game was all about how much a brand can burn on influencers and their script. CEO 3 commented ugly on the digital scenario because the capital being invested in getting medium and small-scale influencers is continuously rising, and this is being done by bigger players to suppress startups. CEO 4 was convinced that it was the consumer's fault that brands are up to such unethical strategies, he quoted that people today are only after no one is required to read the text, just visual content, and they consider it supreme.

Most successful digital marketing strategy? CEO 1, digital marketing, is all about creating demand and the fear of how much the consumer will lose if they don't buy. Our company has its agricultural land for the production of raw materials and showing our daily operations

worked the best for us. May it be Instagram or Facebook, our farm videos did wonders. CEO 2, influencer marketing, hire a group of influencers, half from the mediocre range and the other half premium, have them scripted thoroughly and let your product videos prevail for at least a week through boosting post-conversion will come. CEO 3, Paid ads with informative videos about the product and its benefits, traceability of the ingredients and lab certifications can lead to conversions. CEO 4, affiliate marketing, worked the best for us, we hired an influencer and attached a quote to the video, which applied a discount, as the product sold from the ad, we would give them free shipping and discount, and we got conversions.

How is YouTube helpful in spreading awareness? CEO 1, YouTube has been a great help, but only in the later stages. Initially, our ad budget did not allow us to go to YouTube, but since we have started advertising, the sales numbers have tripled. CEO 2, YouTube is a milestone for partially established brands. We first started making videos with popular influencers in each state of the country to generate sales locally and slowly, after posting 20-30 videos with influencers from different states, a regular order base has been established. CEO 3, we used YouTube as an alternative to Instagram and posted regular videos instead of creative posts. The results were great, although the start was slow, but as we kept on posting about our brand story and vision, a small community was built which led us to some of the most loyal customers.

Is hiring an agency for social media posting worth it? All the CEOs had a common say on this one, all of them were completely against the practice and advised new founders to gain hands-on experience for the first two years and then outsource things to better understand the creative game and lead the agency from the front. If a startup hires an agency, then a major share of the

budget will go into sustaining outsourcing additionally, the founder will gain nothing. It's better to understand things first and then outsource it to agencies.

4.6 Conclusion

The results of this study lay a roadmap for new founders to select a social media platform and strategy for generating sales and gaining traction. Instagram is the key social media platform for brand building and creating an aura wherein the content should be inclined towards showing the values of the brand. A community needs to be built to gain loyal customers. Facebook is important, but only for gaining followers and community building when it comes to sales, Instagram is the the most reliable option in India. E-commerce is the battleground for nutraceutical brands, and a startup needs to achieve a ROAS of at least 2.5 to make its operations run smoothly. YouTube can be of great help through influencer marketing. All in all, the nutraceutical domain is highly dynamic,c and the vision of the brand needs to be expressed to the masses through its mission and social media content.

CHAPTER V: DISCUSSION

In this section of the study, we will talk about the implications of our results and how a startup can tailor their digital marketing strategies based on our road map. Through this study, we very clearly talk about four aspects of a startup. First, the social media presence and its significance, second, content creation and how a brand needs to find its niche, third, the importance of digital presence and the costs associated with it, Finally, the E-commerce strategies wherein a company needs to make a mark for getting sales. Consumer behaviour is a part of this realm and helps in understanding the scenario, but the game will be played on these platforms. In this section, we will get into the details of the number to make things easier for the reader.

5.1 Discussion on Question One

Question 1 elaborately discussed the impact of social media platforms Instagram and Facebook on gaining brand followers and sales individually. The results pointed towards Instagram being a better option for promoting sales and Facebook for gaining followers and building a community. We have been continuously stressing building a community or a niche for a brand because unless and until a brand is distinctively seen by the audience, it's not going to get conversions. We also interviewed the marketing head of PlantBro Life Sciences, and he mentioned organic farm videos and product benefit videos to be show stoppers for the company in case of both sales and followers, this implies that each brand needs to find its speciality and work towards showcasing it to the audience. However, all the content that is being created will not get us numbers like the static posts, they are just

fillers but should contain the creative essence of the brand. The most important entity in content creation is innovation and the art of showing similar content in a different way each day.

The startup scenario in the nutraceutical domain is highly dynamic, and the trends change every month, so for new companies, it's very important to define their category and make a distinct standing for their product by showing content that is unique in its way and has something major or minor which other brands don't. Instagram is a great platform for influencer marketing, but the capital needs to be spent very carefully, and the iteration of influencers is a straight no. A company should focus on working with influencers from different categories to attract people with different interests. Numbers are important, so a close check towards ROAS is essential. All in all, use Instagram for sales Facebook for followers and influencers on both.

5.2 Discussion on Question 2

In this section, we presented a qualitative comparison of Social media, E-commerce and YouTube strategies of seven popular modern-day brands in India, which we conducted by analysing their activities over social media and e-commerce platforms. It was clear that the bootstrapped companies with little resources would never be able to compete with brands with huge funding or sales numbers. Thus, a distinct strategy needs to be framed, like, in the case of PlantBro, our founder-led videos, farm videos and benefits videos clicked with the audience. The agenda is to make a mark in the audience, for being seen is important, so who is being shown is also important, but if the content has some matter that can lure the audience, then the need for famous influencers deteriorates. PlantBro does work with

influencers, but only medium-scale ones we do not burn too much there because our audiences are very focused on the content we show, and they want something different. A glamorous model and products flying around are outdated, audiences today want clear descriptions, traceability and trust factors from a brand. Most brands with limited resources are doing the same; they try to portray their uniqueness distinctly on social media.

E-commerce is a different ball game; here, every brand needs to spend money to gain visibility. Unless and until the product is visible in the first ten slots on the first page, there will be no effective sales. There are different strategies for achieving the target, like sponsored product placement, banners and video ads and banner ads on competitors' product pages. There's another strategy of gaining reviews on a product, as per Amazon's algorithm, if there are a decent number of reviews on a product, it automatically starts showing on the first page. Now, how does a brand with minimal sales get these reviews, in India, some agencies help in achieving this goal through the malpractice of generating fake orders and reviews, the cost is also minimal. However, it is not advised to do so because if Amazon gets a hint of it, there are straight away going to blacklist the account not the listing but the whole account. Still, some brands follow this strategy and gain numbers on Amazon.

YouTube is essential for moderately popular brands; it's inevitable not to run ads here because people are more inclined towards visual content, and 5-sec non-skippable ads are the most popular in this category, so once the brand has started to generate decent sales from Instagram, Facebook or Amazon, it's highly recommended to start YouTube ads.

5.3 Discussion on Question 3

After an in-depth discussion on how and what a brand should do to gain visibility and sales, it is time to talk about how consumers think of nutraceuticals and fungi-based products, the survey we conducted pointed clearly to the fact that nutraceuticals are popular among GenZ, Millennials and GenX to some extent. However, the popularity dips down when it comes to senior citizens they only administer products prescribed by the medical practitioners.

Nutraceuticals are, in general, very popular among the masses, and almost 80% of people consume them, especially in the post-pandemic phase, for either boosting their immunity or any other reason. However, this was not confirmed for fungi-based nutraceuticals as only 35% of the people confirmed knowing about them, and 15%-20% consumed them. Thus, it is required to spread awareness through different channels, may it be social media, mass media or any other channel. Each brand needs to design its awareness strategy, including different types of media and channels, to make fungal supplements a success. There is a huge scope, and the people are interested in knowing about them.

5.4 Discussion on Question 4

In question 4, we discussed the views of CEOs of four different nanotechnology-based nutraceutical brands in India. However, we haven't disclosed the names of the brands due to privacy reasons and relations in the market. As per the CEOs, the digital environment has gone dirty, and the strategies followed by big players in the market are unethical both for competitor brands and consumers. In Instagram strategies especially, where influencer marketing plays a great role, the big brands hire famous influencers with gigantic

followings and make them spread information that has been exaggerated in terms of benefits and credentials. This hampers the image of smaller brands selling the same product because the consumer thinks that the bigger brand holds more certifications and smaller brands do not. In this way, the brands possessing high capital gain high in the Instagram battle. The same is the case with E-commerce and Facebook, wherein influencers from across the globe participate to uplift the uplifted and smaller brands until they hit their niche and have struggled to break even.

CHAPTER VI: SUMMARY, IMPLICATIONS, AND RECOMMENDATIONS

6.1 Summary

To summarise the whole study, we would say the methodologies followed were clean, and easy to follow, and the participants gave their whole participation. The research has been structured well, and we walk the reader through various aspects of the nutraceutical industry, starting from social media to e-commerce to video sharing to consumer behaviour to the inside news of the industry. Through this study, a complete road map is availed to the newbies in the field.

6.2 Implications

This study trains and educates the reader regarding the digital scenario of nutraceutical products in India. Right from the beginning, we talked numbers and have provided in-depth data on a successful fungal-based nutraceutical brand, PlantBro Life Sciences, through this research. The reader will get a direction in which he needs to steer the brand to get convincing sales and followers. A detailed insight into consumer behaviour is provided through the survey. This study ticks in all the boxes an entrepreneur needs to fulfil before getting into the business. A crystal-clear strategy map with the WHYs? Has been provided.

6.3 Recommendations for Future Research

Although this research is highly detailed and fulfils most of the criteria required for a startup owner, there are some points that we feel we lack. Firstly, the qualitative strategy survey of the nutraceutical brands could have been quantitative and could have precisely

explained the weightage each brand gave to an individual strategy. Secondly, the survey we conducted could have had a greater number of participants from Gen Z and millennials. Thirdly, the interviews we conducted with CEOs would have held higher significance if we could mention the brand names.

6.4 Conclusion

This study provides a roadmap for new entrepreneurs in the nutraceutical domain, especially products based on fungal origins. We have pointed out the most efficient platforms: Instagram for sales and Facebook for following, sales and conversions. For brands which are heftily funded it's important to opt for strategies which can influence the masses and picking up influencers who can directly convince the audience to get converted. This agenda can be very well fulfilled by going for Bollywood stars, trained nutritionists and celebrity gym trainers. Additionally, a brand should focus on certifications and make sure they provide utmost traceability to their consumers. The brands with moderate funding can go for podcasting wherein they collaborate with different prominent fitness podcasters and explain why and what makes their merchandise better than the competition. Further, they can get their products lab tested and make the reports public to serve the traceability issue in the ayurvedic domain. The scenario gets tricky for the brands which are bootstrapped like PlantBro itself, we needed to find a niche for our products and create content which is least expensive and makes maximum impact like our organic farm videos and founder led videos on product efficacy and production. We very eagerly displayed our mushrooms growing, processing and packaging facility to our audience with lab reports of all our products. This strategy worked for us because it was completely organic in nature and consumers believed it because somehow when they see the founder himself advocating his product it generates a sense of trust.

Next, we have explained the most prevalent strategies in the market for both e-commerce platforms and social media. Consumer behaviour has been closely explained to give newbies a clear hint of the target audience, and last, we have explained the dirty tactics of the giants without taking any names, which each startup needs to be careful about. E-commerce platforms like Amazon and Flipkart are the actual battlegrounds for nutraceutical products in India as per our opinion, it requires a highly dynamic approach towards product campaigns and the hero product should always have a video advertisement running and its positioning should be on the first page in the first ten product. Furthermore, the competition should be tracked, and their strategies should be countered on a regular basis.

Understanding consumer behavior is highly critical as when we conducted the survey, we realized the actual target audience and stopped spending on the people who are not very interested. Brands should regularly survey the population to understand their requirements. These things can't be done in silico; we need to engage with the real world to grasp the true perception of the audience regarding a desired product. We very strongly recommend these survey activity to be conducted on regular basis, especially, before the launch of a new product line.

The brands should maintain a professional relationship with its rival brands and make sure their competition remains healthy, at times in the ayurvedic domain we see things getting tricky may it be with product formulations or advertising strategies. Digital marketing on social media is highly dynamic and it requires critical analysis of strategies at every step.

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APPENDIX A

MEDICINAL MUSHROOM AWARENESS SURVEY QUESTIONS



PLANTBRO LIFE SCIENCES


Rishi Nagar, Hisar (Haryana) | 25001
M. 749483 | 358

Dated.....

To whoever it may concern, it is to certify **PlantBro Life Sciences, Hisar, Haryana, India**, 125001 to carry out a survey cum opinion poll in the Aashiyana Apartments, Gurugram, Haryana, India. Permission granted by the housing board society, Aashiyana apartments.

Following are the survey questions for age groups 15-30, 30-45, 45-60 and 60 above years.

1. What are nutraceuticals and how you perceive them?
2. What are mushrooms? Do you like them in general?
3. Are new age nutraceuticals better than old traditional ayurvedic concoctions.
4. Do you know about fungi based nutraceuticals. If yes, do you use them?
5. Do you know about Cordyceps Militaris mushroom?
6. What are the fungal brands you know about, is PlantBro one of them?


Mahender Kumar
Society secretary


Ankuj
Society Chairman

Signature

APPENDIX B
INFORMED CONSENT

This is to inform you that there are no conflicts of Interest over this research and it is being submitted to the Swiss School of Business Management with full authority of publishing.

APPENDIX C
INTERVIEW GUIDE

In this study, we conducted two interviews, one of which is covered in question one, where the marketing head of PlantBro Life Sciences Private Limited was interviewed about the most successful strategies of PlantBro. The second interview was included in question four, where we interviewed four CEOs of prominent nutraceutical brands to get a holistic picture of the nutraceutical sector in India.

Interview Questions for the Marketing Head of PlantBro Life Sciences

- Q1. Why did Plantbro Life Sciences choose medicinal mushrooms?
- Q2. How has digital marketing (DM) influenced the nutraceutical market (NM)?
- Q3. Is Insta Better or Facebook for start-ups seeking online growth?
- Q4. How tough was it to spread awareness about medicinal mushrooms?
- Q5. Current market standing of PlantBro life sciences?
- Q6. What is the significance of Influencer marketing in the Nutraceutical market?
- Q7. What was PlantBro's clicking moment?

Interview Questions for the CEOs of different nutraceutical brands

- Q1. Why nano nano-based startup?
- Q2. Do these products work?

- Q3. Is the Indian Market supportive in terms of product acceptance and conversions?
- Q4. Are Indian consumers interested?
- Q5. What's the digital scenario like in terms of social media campaigns and E-commerce?
- Q6. What is the most successful Digital Marketing Strategy?
- Q7. Is Instagram better than Facebook from a sales perspective?
- Q8. Is Instagram better than Facebook from a followers' perspective?
- Q9. Does YouTube work in spreading awareness?
- Q10. How was YouTube helpful in promoting sales?
- Q11. Which post format on the Instagram post was most beneficial: reels, stories or static posts?
- Q12. Which post format on Facebook was most beneficial?
- Q13. What is the current standing of the company?
- Q14. What's the final verdict?