

# Implementing Business Integration Marketing Model to Pioneer CBD-Nano Products for Addressing Office Syndrome

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*Abstract— This study explores the strategic implementation of a Business Integration Marketing Model to facilitate the introduction of cutting-edge CBD nano-encapsulation products specifically formulated for alleviating office syndrome-related pain. The convergence of innovative drug delivery technologies, centered around nano-encapsulation, and a holistic marketing approach is examined to bring forth a comprehensive solution for the modern challenge of workplace-related discomfort. The anticipated outcome of this study is a comprehensive framework that integrates technological innovation with market dynamics, facilitating the successful introduction of CBD nano-encapsulation products tailored for office syndrome pain relief. The findings aim to provide valuable insights for businesses seeking to navigate the intersection of pharmaceutical innovation and effective market strategies, ultimately contributing to the advancement of workplace wellness solutions*

*Index Terms— Business Marketing Integration Model, CBD nano-encapsulation, office syndrome pain relief.*

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## I. INTRODUCTION

Office syndrome is a collection of symptoms commonly associated with a sedentary lifestyle related to long hours of office work. These symptoms include physical, mental, and emotional discomfort caused by factors such as prolonged working hours, poor communication habits, and uncomfortable workstations (Dr.Tan & Partners, 2022). These symptoms include physical, mental, and emotional discomfort caused by factors such as prolonged working hours, poor communication habits, and uncomfortable workstations (Vital Mediclinic teams, 2022)

These symptoms arise from a variety of factors, such as prolonged sitting, poor posture, inadequate workstation ergonomics, and repetitive strain due to computer work, typing, or using a mouse area. In addition, poor air quality in office buildings can contribute to symptoms similar to office syndrome, commonly referred to as sick building syndrome (Healthline, 2022)

Many office workers may not even be aware that they are suffering from office syndrome until the symptoms become more severe, leading to a decrease in productivity and an increase in health-related issues. Early intervention to prevent office syndrome can include ergonomics assessment, implementation of standing desks, encouraging regular breaks, and exercise programs to alleviate the symptoms and negative effects (NHS (UK),2023)

With a surge in technology-based jobs and remote work, the occurrence of office syndrome is anticipated to rise. Many office workers might not realize they are suffering from office syndrome until the symptoms become severe. The habit of prolonged sitting, combined with poor ergonomics, can lead to various musculoskeletal disorders causing pain in parts like the neck, lower back, and shoulder, which are notably prevalent issues among office workers (Jiameng, Dongmei,Zhi Li, and Hyunshi, 2021). Prolonged sitting behavior, for instance, has been associated with negative aspects of general health.

As such, there is an increasing demand for innovative, efficient, and easy-to-administer treatments. Among the promising candidates are CBD nano-encapsulation products that have shown potential in providing targeted and efficient pain relief. A study published in the Journal of Drug Delivery Science and Technology suggests that nanoencapsulated CBD could improve pain and inflammation in mice. They used nanoemulsion preparations for encapsulation and found enhanced anti-inflammatory and analgesic effects (Somayeh, Younes, Nosratollah, 2021)

Cannabidiol (CBD), a non-psychoactive compound derived from the hemp plant, has been recognized for its therapeutic properties, including its capacity for pain relief. In the study published named "Cannabidiol use and effectiveness: real-world evidence from a Canadian medical cannabis clinic" investigated the use of CBD among a

population of chronic pain patients, further exploring its potential effectiveness (Rapin, Gamaoun, El Hage, Arboleda, & Prosk, 2021).

However, the successful implementation and acceptance of such a product in the market require a robust and effective marketing model. In exploring the integration of various marketing tactics with an acute understanding of market dynamics, the proposed model is designed to address the market's complexities and ensure successful product integration. This paper will delve deep into the formulation and benefits of CBD nano-encapsulation, investigate the constructs of a successful business integration marketing model, and examine potential market responses.

By doing so, this research aims to provide an encompassing roadmap for launching such groundbreaking products into the increasingly demanding pain management market and to present a business integration marketing model aimed at successfully launching CBD nano-encapsulation products designed to address office syndrome pain into the market.

## II. LITERATURE REVIEW

Office syndrome is a significant health-related issue due to prolonged sitting behaviors that can lead to a range of severe health problems. It also suggests that office work creates a platform conducive to both physical and mental health issues, including musculoskeletal disorders, cardiovascular disease, and even mental health complications.

With the review study on the Adverse Effects of Prolonged Sitting Behavior on the General Health of Office Workers, focused on the relationship between prolonged sitting and general health in office workers and concluded that such behavior increased the risk of musculoskeletal disorders (MSDs) and other health problems including obesity, cardiovascular diseases, cancer, and early mortality. (Daneshmandi, Choobineh, Ghaem, & Karimi, 2017).

The role of a sedentary lifestyle and physical activity on neck and shoulder pain, in this paper the authors discussed how a sedentary lifestyle, often associated with office work, increased the risk of neck and shoulder pain, contributing to the so-called office syndrome, and negatively (Pekka, Kristiina, Patja, Veikko, 2002).

Based on the research results, inactivity is stated as the cause of many health issues related to heart disease, and this can be linked to office work which is generally quite sedentary (Guo, Wang, Liu, Randall, 2014). An ergonomic intervention, involving workstation adjustments, can alleviate musculoskeletal pain in office workers, and suggests that the absence of such interventions can exacerbate office syndrome (Lee, DE Barros, DE Castro, & DE Oliveira Sato, 2021)

It can be seen that CBD nano-encapsulation products indeed hold much promise in providing targeted and efficient pain relief. They offer several potential benefits, including improved targeting and bioavailability of drugs. With the

study of Nanotechnology-based approach in tuberculosis treatment, focusing on tuberculosis treatment, it mentions the general advantage of nanotechnology in medical treatments, including the improved targeting of specific cells, reducing the required dosage (Liu, Shi and Hao, 2021). While the study of Enhanced analgesic effects of CBD via nanoemulsion formulations (Somayeh, Younes, Nosratollah, Abdolreza, 2021) describes how the use of nanoemulsion for CBD encapsulation enhanced anti-inflammatory and analgesic effects in mice. And the research of Cannabidiol (CBD) nanoparticles in drug delivery for pain and inflammation treatment outlines the potential advantages of using CBD nanoparticles for drug delivery in terms of targeted treatment for pain and inflammation (Bonoiu, Mahajan, Ding, Roy, Yong, Kumar, and Prasad, 2009)

A resilient and efficient marketing model is essential for the successful integration and widespread acceptance of CBD nano-encapsulation products in the market. It is clear that the successful introduction and acceptance of nano-encapsulation CBD products in the market greatly depend on a robust and effective marketing model. The ethical aspect of pharmaceutical advertising, the use of virtual social networks for product marketing, engaging and communicating effectively with stakeholders are all crucial factors for successful implementation.

On the paper Marketing and Medicine: The Ethics of Pharmaceutical Advertising, it was discussed the importance of ethical advertising when marketing pharmaceutical products to ensure the trust of consumers. The application of such strategies should benefit CBD nano-encapsulation products (Barut, Arikan, Barut, Harma, Harma and Payasli B, 2011). With the paper of Development of Nano-Products: Stakeholders' Expectations for Decision-Making, this article establish an approach for successful implementation of nano-products in terms of decision-making, regulations, and acceptance by consumers. They also emphasized the role of effective communication in stakeholders' acceptance (Roesslein, & Hirsch, 2018).

From the review of an effective marketing model which can apply to the acceptance of CBD nano-encapsulation products, it is observed that devising an effective marketing model for the acceptance of CBD nano-encapsulation products should encompass a comprehensive understanding of the chemical properties and applications of CBD. Additionally, it should entail knowledge of consumer preferences and the progressive CBD product retail landscape.

In the paper named "Real-world consumer preferences for CBD products: A survey study" highlights the public's perception and use of CBD products, including consumers' source of products, quality, safety, and efficacy of CBD1. A marketing model that considers these preferences is relevant for CBD nano-encapsulation products (Rapin, Gamaoun, El Hage, Arboleda, & Prosk, 2021). Furthermore, the research named "The Essential Medicinal Chemistry of Cannabidiol

(CBD)” presents a critical review of the published medicinal chemistry properties of CBD, which are essential for creating an effective marketing model in the context of CBD nano-encapsulation products (Nelson, Bisson, Gawronski, Mahieux, & Stout, 2020). And other supported paper from Exploring the global retailing of CBD products: a retail analytics approach discusses the global retailing landscape of CBD products and the need for businesses to adapt to the rapidly evolving market landscape. The understanding from these studies can be leveraged to devise a marketing model for CBD nano-encapsulation products (Drakopoulos, Mateu, Kenienda, & Petrakaki, 2021).

Offer a comprehensive roadmap for introducing these groundbreaking products into the growing and demanding pain management market and introduce a marketing model that integrates business strategies, focusing on the successful launch of CBD nano-encapsulation products specifically crafted for alleviating office syndrome pain in the market.

From review a business integration marketing model

research which aimed at successfully launching CBD nano-encapsulation products should encompass the following components 1) Branding and positioning strategies to create a strong brand image (Sreeja, & Femina, 2017) 2) Multichannel retailing that leverages various distribution channels for improved product reach and acceptance (Piotrowicz, & Cuthbertson, 2014) 3) Digital marketing initiatives to invite positive online customer feedback 4) Strategic supply chain integration to streamline the transition from product development to retail (Ruiz-Borrego, López-Buendía, Jiménez-Quintero, & García-Sánchez, 2019).

In this research, it will be examined the interconnected elements of business integration management and market forecasting as critical factors contributing to overall success and competitiveness in business. Consequently, these components have been incorporated into a business integrated marketing framework, which is to be studied and applied in conjunction with innovative prototype CBD products that utilize nano-encapsulation with lipid particles.

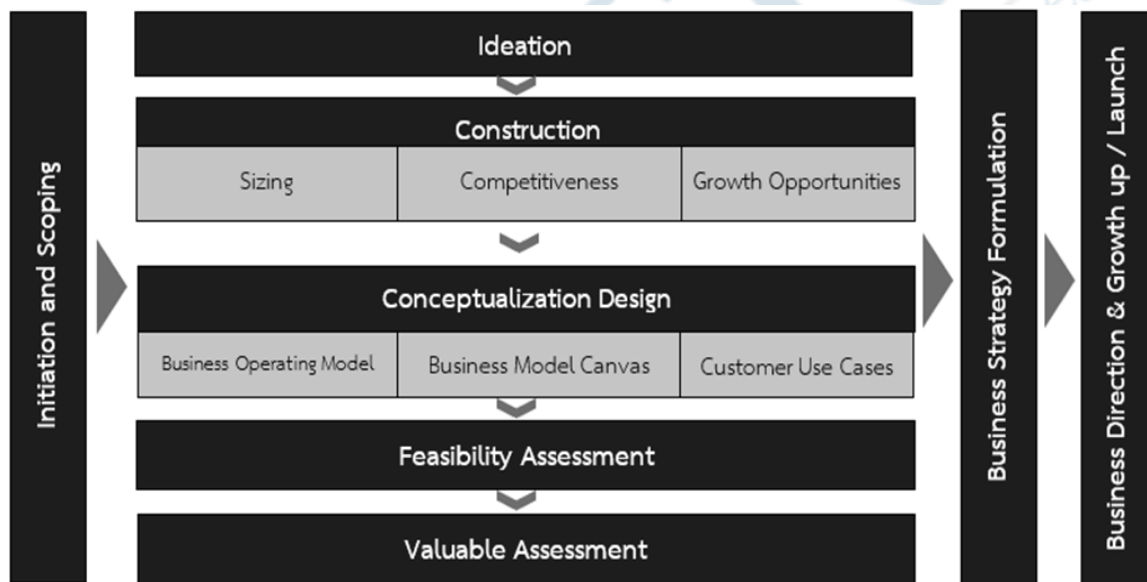


Figure 1: Business Integration Marketing Model to enhance market forecasting as critical factors contributing to overall success and competitiveness in business.

### III. METHODOLOGY

A suitable market forecast technique or approach for CBD nano-encapsulation products that entails the strategic use of AI for consumer engagement and targeted marketing, as well as a clear understanding of the sales-marketing interface for efficient functioning, would be a combination of the following techniques:

**Conjoint Analysis** is used in market research to determine how people value different features in a product or service. By understanding the importance of various product attributes to consumers, companies can create more effective marketing messages for CBD nano-encapsulation products. (Tim, 2020). These are key steps to determine how people value different features. To identify Key Product Attributes

of CBD nano-encapsulation products , including factors such as price, formulation strength, encapsulation technology, size, or brand. Then prepare the Conjoint Study by develop a survey where respondents need to make trade-offs among product profiles with varying levels of attributes. This will help in simulating a buying decision scenario. Next Survey administration to a representative sample of your target audience. Data Analysis to analyze the survey data. The data will be represented every participant's responses will give you insights into the preference and relative importance they attach to each product attribute. After analysis **develop marketing messages** that emphasize the most preferred product attributes. For example, if customers place a high value on the formulation strength and brand, focus your marketing messages on these points. In essence, by

**determining customer preferences** and the importance of different product attributes, Conjoint Analysis can guide the development of marketing messages that speak directly to

what customers value most about CBD nano-encapsulation products.

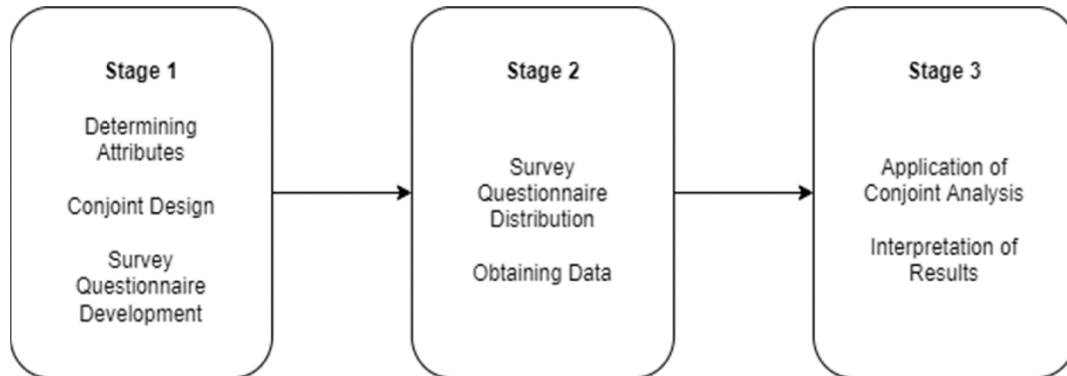


Figure 2: Conjoint Analysis to apply CBD nano-encapsulation products

**Customer Lifetime Value (CLV)** Modeling predict the net profit from the entire future relationship with a customer. The outcome of this forecast approach can help in understanding a customer’s potential value and tailoring both product development and marketing strategies accordingly. These are key steps to help understanding a customer’s potential value. To **calculate the lifetime value of your existing customers** by looking at the average order value, purchase frequency, customer lifespan, and retention rate for each customer. Then **segment Customers** Based on CLV for customers, segment them into different groups based on their value. Categories could include high-value customers, medium-value customers, and low-value customers (Clevertap, 2021). **Analyze the purchasing patterns of**

**high-value customers** is the next step. Understand what types of CBD nano-encapsulation products they prefer, how often they buy, their preferred buying channel, and other such factors. Then, **tailor your marketing messages** accordingly. For instance, if high-value customers prefer a certain formulation or delivery method of CBD, highlight these aspects in your marketing campaign. With about customer preferences and their value, we can personalize the communication for different segments to improve customer engagement. Lastly **use CLV insights to attract more high-value customers**. If certain marketing channels or campaigns are more likely to gain high CLV customers, focus your marketing resources on these avenues (Postfunnel, 2022)

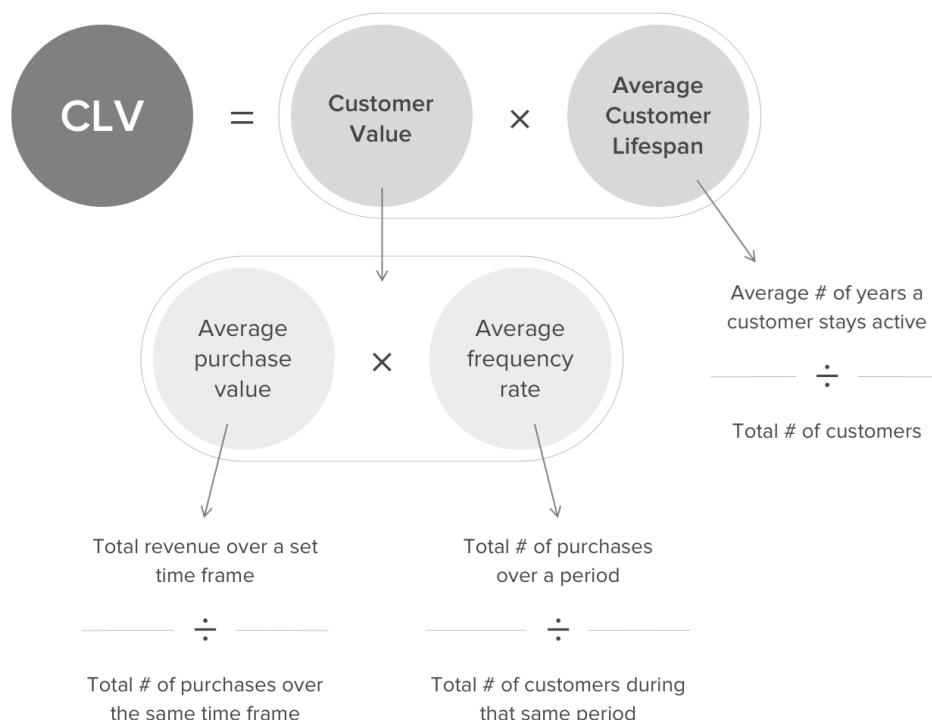


Figure 3: Customer Lifetime Value (CLV)

#### IV. RESULTS AND DISCUSSION

##### 4.1 People value different features in a product or service

Understanding the importance of various product attributes to consumers, companies can create more effective marketing messages for CBD nano-encapsulation products. When marketing CBD nano-encapsulation products, it's essential to **identify the features** that affect customers' purchase decisions. These features summarizing often become the key selling points of CBD nano-encapsulation products.

1. **Formulation Strength:** The concentration of CBD within your product can significantly affect its appeal. Higher concentrations often command higher prices but offer stronger effects.

2. **Delivery Method:** Whether it's a tincture, topical cream, softgel, spray, or some other delivery method, this can greatly influence consumer preference depending on the use case.

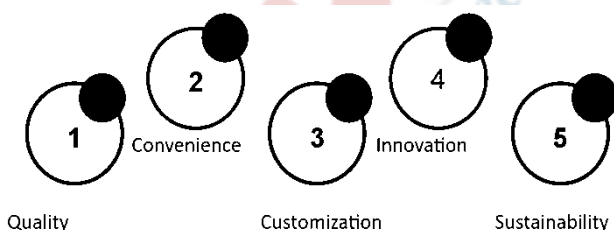
3. **Third-Party Lab Testing:** Products that are third-party tested tend to be more trusted by consumers. Advertising this attribute can help boost consumer confidence in product's safety and effectiveness.

4. **Price:** Price is often a deciding factor for customers. Offering competitive pricing or good value for money can greatly affect product's attractiveness to consumers.

5. **Encapsulation Technology:** The specific nano-encapsulation technology used can differentiate product in the market. If the technology allows for faster absorption or longer-lasting effects, this should be highlighted.

6. **Origin of Hemp:** The origin of the hemp used in the product can be another attribute that consumers consider. Products sourced from organic, domestic farms often appeal to quality-focused consumers.

7. **Brand Reputation:** Brand reputation and trustworthiness can often sway customers. Awards, positive reviews, and testimonials can all add to brand's perceived value



**Figure 4:** Factors of key product features to enhance perceived values

**Develop a survey** where respondents need to make trade-offs among product profiles with varying levels of attributes. This research will be create a simulated buying decision scenario for CBD nano-encapsulation products. This scenario is designed to illustrate the potential decision-making process a consumer might go through when

considering CBD nano-encapsulation products for office syndrome pain relief. Adjustments can be made based on specific features and marketing strategies want to emphasize.

##### *Scenario: Elevating Employee Wellness in the Workplace*

**Background:** Imagine you're a professional working in a fast-paced corporate environment. Long hours at the desk, constant screen time, and the stress of meeting deadlines have led to a rise in office syndrome-related pain. Seeking a solution, you come across a new line of CBD nano-encapsulation products designed specifically for office syndrome pain relief.

**Product Features:** Nano-Encapsulation Technology: The CBD is encapsulated in lipid particles, ensuring enhanced absorption and targeted relief.

**Scientifically Formulated:** Developed based on thorough research and scientific principles for optimal efficacy.

**Non-Psychoactive:** Contains only CBD, ensuring relief without the psychoactive effects associated with THC.

**Awareness Stage:** aware of the innovative CBD nano-encapsulation products through online articles and social media posts highlighting their efficacy in addressing office syndrome pain.

**Interest Stage:** Intrigued by the positive reviews and scientific backing, delve deeper into understanding how nano-encapsulation technology works and its potential benefits.

**Consideration Stage:** compare these products with traditional pain relief options, noting the targeted approach and potential for quicker results due to nano-encapsulation.

**Purchase Decision:** Encouraged by the scientific validity and positive testimonials, decide to try the CBD nano-encapsulation products, selecting a convenient form that aligns with your lifestyle.

##### *Factors Influencing Decision*

**Scientific Validity:** The research and development behind the nano-encapsulation technology.

**User Testimonials:** Positive reviews and experiences shared by individuals with similar concerns.

**Product Variety:** The availability of different forms catering to personal preferences.

**Marketing Strategy Impact:** The effective marketing strategy that highlighted the innovative nano-encapsulation technology, backed by scientific research, played a crucial role in influencing the buying decision.

**Then we develop a market message** requires a clear understanding of your target audience and your product's unique value proposition. Discover the Power of Relief with CBD Nano. Please remember that marketing messages for health-related products need to maintain ethical standards. It should be clear that the product is not a guaranteed solution and that individuals should consult with their healthcare provider before trying new health products. Any claims made should be supported by comprehensive scientific research.

“Are you tired of enduring persistent back pain caused by long hours in the office? Introducing CBD Nano, the breakthrough natural remedy that might change the way you manage your chronic back pain from Office Syndrome.

Our innovative product harnesses the potential therapeutic properties of cannabidiol (CBD) in a nanomolecular format. CBD Nano is designed to potentially offer faster absorption, with higher bioavailability than traditional oral CBD. This means a more efficient interaction with your body's endocannabinoid system.

CBD Nano isn't just an all-natural solution, it's also supported by cutting-edge scientific research seeking to explore its effectiveness in addressing the chronic lower back pain that is an all too common symptom of Office Syndrome.

Don't let chronic back pain limit your daily activities. With CBD Nano, you could be moving towards a future where pain doesn't hold you back from office work or any other activity.

CBD Nano - Embrace the science of nature and unlock your potential for a pain-free life.

Additionally, the regulations surrounding advertising CBD products can be complex and vary greatly by region, so it's crucial to review your market message for compliance with local regulations”

**Understanding customer preferences** is vital for defining the product’s competitive position in the market. The research could identify customer preferences and the importance of different product attributes for CBD Nano aimed at relieving chronic back pain due to Office Syndrome. To identify what attributes are most important to them in a product designed for chronic back pain relief. This could include effectiveness, price, side effects, delivery method (e.g., pill, oil, topical), speed of relief, other benefits (e.g., improved sleep, relaxation), and the importance of a natural formulation. Monitor social media and online forums to learn what people are saying about CBD products for pain relief. This can provide insight into potential improvements, unmet needs in the market, and common complaints or issues.

#### 4.2 Modeling predict the net profit from the entire future relationship with a customer

Calculating the Customer Lifetime Value (CLV) is key for understanding how valuable a customer is to the company throughout relationship. The CLV can help tailor marketing strategies, manage budgets, and forecast sales. After reviewed a lot of research, we can summarize the CLV Formula to apply with calculate lifetime value of customer of CBD Nano relief chronic back pain due to Office Syndrome to enhance market forecasting and marketing competitiveness

Simplified CLV Formula:

$$[\text{CLV}] = (\text{Average Value of a Sale}) / (\text{Number of Repeat Transactions}) / (\text{Average Retention Time in years})$$

Step-by-Step Calculation:

Determine Average Sale Value: Calculate this by dividing total revenue by the number of purchases over a period.

$$[\text{Average Value of a Sale}] = \frac{\text{Total Revenue}}{\text{Number of Purchases}}$$

Calculate Number of Repeat Transactions: Look at the purchase frequency average over a given time frame.

$$[\text{Number of Repeat Transactions}] = \frac{\text{Total Number of Purchases}}{\text{Unique Customers}}$$

Find Average Retention Time: Determine the typical customer lifespan—an estimate of how long a customer continues to buy from you. It also helps to factor in Profit margins per customer

Retention rates: The percentage of customers you retain each year. A higher retention rate increases the CLV, as it indicates customers continue to purchase over a longer period.

Here's an expanded version of the CLV formula that considers profit margins:

$$[\text{Expanded CLV}] = (\text{Average Value of a Sale}) \times (\text{Profit Margin per Sale}) \times (\text{Number of Repeat Transactions}) \times (\text{Retention Rate}) \times (\text{Average Retention Time})$$

To apply this model for CBD Nano used for chronic back pain relief due to Office Syndrome we would need to gather data on how often customers return to repurchase the product.

The average time they continue to use the product before discontinuing (a month, a year, etc.). The profit made from each sale after subtracting the costs associated with the product.

Example Calculation:

Average Sale Value: \$50  
 Number of Repeat Transactions per year: 5  
 Average Profit Margin per Sale: 70%  
 Average Retention Time: 3 years  
 Retention Rate per year: 90%

Using the Expanded CLV formula:

$$[\text{CLV}] = \$50 \times 70\% \times 5 \times 90\% \times 3 = \$945$$

This means that, on average, each customer would bring in \$945 over the span of three years. With the calculated CLV, we can then make more informed decisions about how much money you should spend on acquiring new customers (customer acquisition costs, CAC) and how much we can

invest in retaining existing ones. A common rule of thumb is that your CLV should be at least three times your CAC for a sustainable business.

Segmenting customers into high, medium, and low value is a strategic approach to target them effectively and allocate marketing resources. Segmentation allows us to optimize marketing strategies by focusing on the customers that will drive the most revenue while also nurturing potential growth customers. Over time, analyze customer behavior to iterate and refine these segments for even greater precision in targeting and personalization. Here is a potential output after analyze from potential framework to categorize customers for CBD Nano aimed at relieving chronic back pain due to Office Syndrome.

### 1) High-Value Customers (HVCs)

#### Characteristics:

- They make regular and consistent purchases.
- They tend to buy the highest-priced products or bundles.
- They have a higher-than-average order value.
- They engage in subscriptions or recurring purchases.

#### Strategies:

- Nurture with a loyalty program or exclusive offers.
- Provide superior customer service experiences.
- Engage them with community-building initiatives.
- Request testimonials or reviews for marketing.

### 2) Medium-Value Customers (MVCs)

#### Characteristics:

- They purchase less frequently or are new customers who have made a one-time purchase above the low-value threshold.
- They show potential to become HVCs with the right incentive.
- Their average order value is around the median for all customers.

#### Strategies:

- Encourage repeat purchases through discounts on future buys or bundle deals.
- Offer targeted upsell or cross-sell promotions.
- Engage through educational content about the benefits of CBD Nano.
- Initiate loyalty programs with tiered rewards that encourage more frequent purchases.
- Collect data on preferences to personalize marketing efforts.

### 3) Low-Value Customers (LVCs)

#### Characteristics:

- They make infrequent, one-off purchases.
- They spend below the average order value.

- They are often driven by discounts or one-time offers.

#### Strategies:

- Offer entry-level products or samples to introduce them to the brand.
- Send regular communications (newsletters, promotions) to keep the brand top-of-mind.
- Encourage feedback to understand their needs and potential barriers.
- Educate them on the comprehensive benefits of consistent use.

Analyzing purchasing power of high-value customers can provide important insights for market forecasting and improving marketing competitiveness. In this research, we **identify High-Value Customers (HVCs)** by determine who your HVCs are. HVCs can be defined as those who have higher purchase frequency, are influences in their social circles hence spreading word-of-mouth, and ones who are loyal to CBD Nano products.

Understand their Spending Habits by **analyze the spending patterns of these customers**; the average spend per purchase, frequency of purchase, preferred products etc. This can give you valuable insights into which products they are more likely to buy or favor.

**High-Value Customers (HVCs)** may have less sensitivity to price changes. However, it's important to assess how price fluctuations influence their purchasing behavior. Determine if higher prices lead to reduced purchases, or if high prices are perceived as indicators of higher quality and thus result in more purchases.

Engaging customers through feedback sessions or surveys can provide insights on their satisfaction levels with products and services. Look specifically at feedback from HVCs since their satisfaction can translate into higher purchasing power.

Look for trends related to economic factors (income levels, inflation rates, etc.), geographical location, demographics, and other factors that might affect purchasing power. See if increased income results in a higher frequency or quantity of purchases, or larger purchases at each transaction.

Scrutinize how seasonal changes or promotional offers affect their purchasing power and habits. Are there predictable spikes during particular sales? What kind of promotions are particularly effective?

**Design marketing strategies** that cater to these customers' preferences and habits to promote more frequent and larger purchases. And, offer promotions that appeal to your High-Value Customers (HVCs) Premium promotional offerings would encourage more spending from these high-value customers, increasing their purchasing power.

**Discover the power of CBD Nano** for fast and effective relief against chronic back pain caused by Office Syndrome - delve into its benefits with our comprehensive guide. The majority of the results are informative articles showcasing the benefits and types of CBD products for back pain relief. For our goal, the focus should be on creating a landing page as

well as a comprehensive blog post that contains valuable information for potential customers. These are the sample message that we will be able to apply with CBD Nano Products.

- Fast Relief for Office Syndrome: Discover CBD Nano Chronic Back Pain Solutions
- The Ultimate Guide to CBD Nano: Effective Back Pain Relief for Office Syndrome
- CBD Nano: A Revolutionizing Breakthrough for Chronic Back Pain from Office Syndrome
- Experience Powerful CBD Nano Relief: End Chronic Back Pain Due to Desk Work

### V. DISCUSSION

To successfully introduce and market pioneering CBD Nano products designed for addressing Office Syndrome pain, leveraging a strong business integration marketing model is crucial. Here, we lay out key discussion points on how to carry out this strategy effectively.

**Utilizing an integrated marketing communication strategy** will allow you to establish a consistent brand message across all channels, be it web, social media, email newsletters, print, blogs, or others. **Collaborating with strategic partners** like healthcare providers, physiotherapy clinics and chiropractic offices can help your brand gain credibility and extend its reach.

**Product Education & Awareness** to attract the right consumers, we need to help them understand the benefits and usage of CBD Nano products. Use blogs, articles, webinars, or even YouTube tutorial videos to educate potential customers about the product and its value.

**Influencer Marketing and Coalitions** by partnering with influential personalities in the health and wellness space, or those who've experienced Office Syndrome can provide an authentic voice to your product. **Integrated CRM Approach** can help track customer interactions across all touchpoints, thus enabling personalized and targeted marketing strategies.

**Maximizing Customer Lifetime Value (CLV)** by focus not just on acquiring new customers but also retaining existing ones by providing exceptional customer service, loyalty programs, and personalized discount offers.

**Integrating Offline and Online Campaigns** seamless marketing strategy that unites online and offline campaigns will ensure consistent messaging, enhancing overall brand recognition. Use **SEO-friendly content** to draw in leads searching for CBD products or relief from Office Syndrome. A well-planned keyword strategy aimed at high purchase intent can help improve organic reach.

Lastly **Tracking Success and Key Metrics** by keep a close eye on key performance indicators (KPIs) such as cost per lead, conversion rates, customer acquisition costs, and customer retention rates to evaluate the success of your marketing efforts.

By discussing and implementing these points effectively, your business should be able to reach and engage potential

high-value customers and introduce your pioneering CBD Nano products for Office Syndrome to the market successfully.

### Implication for research

Our results contribute to implement an integrated business marketing model to introduce CBD Nano products for Office Syndrome, it's crucial to foresee the potential implications that could impact various facets of strategy. Some of Considerations happens after results happens

**Competitive Landscape** happened after analyzed the current market to understand the level of competition. The research should provide insights into whether the market is ready for pioneering products and what kind of messaging and positioning would differentiate brand. This research step may reveal a saturated market, requiring unique value propositions and a robust marketing strategy to capture attention.

**Consumer Acceptance and Education** by assess the knowledge base and perceptions of target audience regarding CBD products for health purposes. There might be challenges related to consumer skepticism or lack of understanding, which would necessitate a strong educational component in marketing. If consumer hesitancy is identified, we may need to invest more heavily in informational content, which could alter timelines and budget requirements. In the research of Borchardt, D. (2017), named "the Overview of Consumer Perception" indicates that consumer perceptions of CBD products are generally influenced by social, cultural, and informational factors. Studies show a variance in acceptance levels across different demographics. In the research named "The Cannabis Consumer Speaks: Perceptions and Product Use." Article of Corroon, J., & Phillips, J. A. (2018) revealed that while there's a growing acceptance of CBD as a wellness product, there's still a substantial lack of understanding of its uses and benefits, indicating a need for more consumer education. In the paper of The Role of Education in Consumer Acceptance of (Sowles et al. (2017) found that misinformation on social media is widespread, and educational interventions could play a crucial role in correcting misconceptions about CBD and its health benefits.

Investigate local and international **regulations governing** the marketing and sale of CBD products. These regulations can vary significantly and impact labeling, advertising, and the sale of these products. Compliance requirements may necessitate changes to product formulations, packaging, promotion, and distribution strategies, potentially increasing cost and complexity.

Determine the most effective channels for **distributing CBD products**. Consider the viability of online sales versus in-store retail, and assess the benefits and drawbacks of each with respect to target market. By choosing the right distribution model is critical and can have tax, logistic, and scalability implications. Hollister, K., & Walsh, J. (2020). "CBD distribution in a digital age mention An analysis of the benefits and risks of DTC." Journal of Internet Commerce.



This paper provides a deep-dive into the benefits of a DTC approach, highlighting control over branding, customer relationships, and better margins. Vandrey, R., Raber, J. C., Raber, M. E., Douglass, B., Miller, C., & Bonn-Miller, M. O. (2015) has discussed Cannabinoid dose and label accuracy in edible medical cannabis products." JAMA. The authors caution about the varying accuracy of online CBD product labels and emphasize the importance of transparency to gain consumer trust and loyalty.

**Technology Integration and Data Analysis** to understand which technologic solutions are necessary for supporting marketing integration, such as CRM, e-commerce platforms, and analytics tools. Data collection and analysis are vital for measuring campaign effectiveness and customer satisfaction which can be implied to new technologies may require additional training and increase initial operational costs but is essential for long-term success and scalability.

Thorough research covering these areas with an eye on the implications will ensure that the integrated business marketing model is implemented in a way that is proactive, compliant, and sensitive to market needs. It will also help refine the strategies needed to effectively introduce the CBD Nano products to a market segment grappling with Office Syndrome pain.

## VI. CONCLUSION

Moving forward, businesses should remain flexible and responsive to changing consumer behavior, legal implications, new technologies, and market dynamics while continually refining their marketing models. By focusing on education, transparency, regulatory compliance, and an integrated multi-channel approach, CBD Nano products can effectively penetrate and capture the market to provide relief for Office Syndrome sufferers.

Understanding Consumer Perceptions is a recognized need to navigate varied consumer perceptions about CBD products, particularly in the context of health and wellness. Comprehensive educational campaigns, targeting not only prospective customers but also healthcare professionals, could significantly enhance acceptance and widen the consumer base for CBD Nano products.

Channel Selection and Integration is a well-balanced and integrated multi-channel distribution approach appears to be the most effective path forward. This includes the use of direct-to-consumer models, online marketplaces, and traditional brick-and-mortar outlets. An integrated approach allows the business to leverage the strengths of each channel and provide a seamless customer experience.

Regulatory capacity and vigilance are paramount considerations as the CBD product industry is governed by numerous local and international regulations. Conformance to these laws not only protects the business legally but also strengthens consumer trust and acceptance.

Educating the market isn't just about creating awareness of the products, but also providing accurate, easily digestible

information on CBD, its health benefits and any potential side effects. Targeted education based on consumer demographics and pain-related health needs can further refine messaging.

The use of data analytics and digital marketing technologies should be implemented for ROI tracking, consumer behavior analysis, and regular AB testing. Being data-driven allows for making informed decisions, effectively allocating resources, and holding in-depth knowledge of consumers' preferences and habits.

Building alliances with health and wellness influencers, professionals, and corporate wellness programs not only help boost brand credibility but also allow CBD Nano products to reach a wider, yet highly targeted, audience.

Ethical marketing practices and transparency, especially in quality control and product labelling, are vital to building consumer trust. Given the unfamiliarity or potential skepticism consumers might have towards CBD products, building credibility through honest communication and transparency is critical.

## Further Research

Developing a future research agenda for the implementation of a business integration marketing model to pioneer CBD nano products for office syndrome requires a detailed and methodical approach. A structured plan that could be used as a roadmap for further research as below

### 1. Market Analysis

**Purpose:** To understand the current market for CBD nano products and identify potential gaps and opportunities for targeting office syndrome sufferers.

*Key Questions:*

- Who are the current players in the CBD market focusing on health and wellness?
- What are the prevailing consumer perceptions and regulations around CBD nano product usage for office syndrome?
- What are the current sales and distribution channels for these products?

*Research Methods:*

- Market surveys
- Competitor analysis
- Regulatory review
- Distribution channel assessment

### 2. Consumer Needs and Behavior Research

**Purpose:** To gather insights about the office syndrome sufferers, their needs, behavior, and the potential demand for CBD nano products.

*Key Questions:*

- What are the primary symptoms and pain points of office syndrome that consumers are trying to alleviate?
- Are consumers open to using CBD products for health

- and wellness purposes?
- What is the level of awareness around nanotechnology and its perceived benefits?

*Research Methods:*

- Surveys and focus groups
- Ethnographic studies
- Consumer sentiment analysis

**3. Product Efficacy and Safety Studies**

**Purpose:** To substantiate the product's value proposition in terms of efficacious relief from office syndrome symptoms with a focus on safety.

*Key Questions:*

- How effective are CBD nano products in treating symptoms of office syndrome compared to traditional CBD and non-CBD products?
- What is the optimal dosage and frequency?
- What are the short-term and long-term effects of using CBD nano products?

*Research Methods:*

- Clinical trials
- Customer trials and longitudinal studies
- Meta-analysis of existing research

**4. Integration Marketing Model Development**

**Purpose:** To explore and develop effective business and marketing strategies to integrate CBD nano products into the target market successfully.

*Key Questions:*

- What marketing channels are most effective for reaching office workers suffering from office syndrome?
- How can collaborative partnerships and alliances be structured to promote these new products?
- What business models (e.g., direct-to-consumer, B2B2C, subscription) are most suitable?

*Research Methods:*

- Case study analysis of successful market integrations
- Theoretical modelling and simulation
- Delphi method with marketing and business experts

Setting the stage through comprehensive research in these domains will establish a foundation for understanding the intricacies of launching a new CBD nano product tailored for office syndrome in the market, backed by empirical data and strategic insights.

**REFERENCES**

- [1] Ma, J., Ma, D., Li, Z., & Kim, H. (2021). Effects of a Workplace Sit-Stand Desk Intervention on Health and Productivity. *International journal of environmental research and public health*, 18(21), 11604.
- [2] Somayeh Ahmadi, Younes Pilehvar, Nosratollah Zarghami, Abdolreza Abri, Efficient osteoblastic differentiation of human adipose-derived stem cells on TiO<sub>2</sub> nanoparticles and metformin co-embedded electrospun composite nanofibers, *Journal of Drug Delivery Science and Technology*, Volume 66, 2021.
- [3] Rapin, L., Gamaoun, R., El Hage, C., Arboleda, M. F., & Prosk, E. (2021). Cannabidiol use and effectiveness: real-world evidence from a Canadian medical cannabis clinic. *Journal of cannabis research*, 3(1), 19.
- [4] Harvard Health Blog. (2020). CBD for chronic pain: The science doesn't match the marketing.
- [5] Svensson CK. CBD for the treatment of pain: What is the evidence? *J Am Pharm Assoc* (2003). 2020 Nov-Dec;60(6):e80-e83. doi: 10.1016/j.japh.2020.06.009. Epub 2020 Jul 4. PMID: 32636158.
- [6] Daneshmandi, H., Choobineh, A., Ghaem, H., & Karimi, M. (2017). Adverse Effects of Prolonged Sitting Behavior on the General Health of Office Workers. *Journal of lifestyle medicine*, 7(2), 69–75.
- [7] Guo G, Wang L, Liu H, Randall T. Genomic assortative mating in marriages in the United States. *PLoS One*. 2014 Nov 10;9(11):e112322. doi: 10.1371/journal.pone.0112322. PMID: 25384046; PMCID: PMC4226554.
- [8] Lee, S., DE Barros, F. C., DE Castro, C. S. M., & DE Oliveira Sato, T. (2021). Effect of an ergonomic intervention involving workstation adjustments on musculoskeletal pain in office workers-a randomized controlled clinical trial. *Industrial health*, 59(2), 78–85.
- [9] Somayeh, A., Younes, P., Nosratollah, Z., Abdolreza A., Efficient osteoblastic differentiation of human adipose-derived stem cells on TiO<sub>2</sub> nanoparticles and metformin co-embedded electrospun composite nanofibers, *Journal of Drug Delivery Science and Technology*, Volume 66,2021.
- [10] Bonoiu, A. C., Mahajan, S. D., Ding, H., Roy, I., Yong, K. T., Kumar, R., ... & Prasad, P. N. (2009). Nanotechnology approach for drug addiction therapy: gene silencing using delivery of gold nanorod-siRNA nanoplex in dopaminergic neurons. *Proceedings of the National Academy of Sciences*, 106(14), 5546-5550.
- [11] Barut A, Arikan I, Barut F, Harma M, Harma MI, Payasli B. Ovarian cancer during pregnancy. *J Pak Med Assoc*. 2011 Sep;61(9):914-6. PMID: 22360037.
- [12] Roesslein, M., & Hirsch, C. (2018). Development of Nano-Products: Stakeholders' Expectations for Decision-Making. *Nanomaterials*, 8(5), 326.
- [13] Rapin, L., Gamaoun, R., El Hage, C., Arboleda, M. F., & Prosk, E. (2021). Cannabidiol use and effectiveness: real-world evidence from a Canadian medical cannabis registry. *Journal of Cannabis Research*, 3, 19.
- [14] Nelson, K. M., Bisson, J., Gawronski, J., Mahieux, S., & Stout, P. E. (2020). The Essential Medicinal Chemistry of Cannabidiol (CBD). *Journal of Medicinal Chemistry*, 63(21), 12137-12155.
- [15] Drakopoulos, V., Mateu, G., Kenienda, T., & Petrakaki, D. (2021). Exploring the global retailing of CBD products: a retail analytics approach. *Journal of Medical Marketing: Device, Diagnostic and Pharmaceutical Marketing*, 21(1), 30-43.
- [16] Sreeja, S., & Femina, P. (2017). A Study on Brand Building and Product Positioning Strategies. *IJARIIIT*.
- [17] Piotrowicz, W., & Cuthbertson, R. (2014). Introduction to the

Special Issue Information Technology in Retail: Toward Omnichannel Retailing. International Journal of Electronic Commerce, 18(4), 5-16.

- [18] eWOM through ePHM (2019) Ganesh Pokharel. Digital marketing: Exploring eWOM through ePHM for marketing of products and services in the digital age. World Journal of Entrepreneurship, Management, and Sustainable Development, 15(4), 373-388.
- [19] Ruiz-Borrego, C. A., López-Buendía, J., Jiménez-Quintero, J., & García-Sánchez, M. R. (2019). The role of strategic supply chain integration in improving new product development performance: An empirical study. Health Services Management Research, 35(1), 6-15.
- [20] Rai, Rahul. (2012). Identifying Key Product Attributes and Their Importance Levels From Online Customer Reviews. Proceedings of the ASME Design Engineering Technical Conference. 3. 10.1115/DETC2012-70493.
- [21] Pekka, J., Kristiina, Patja., and Veikko, S., (2002). Environmental tobacco smoke and the risk of cardiovascular disease. Scandinavian Journal of Work, Environment & Health
- [22] Vol. 28, Supplement 2. Health effects of environmental tobacco smoke (2002), pp. 41-5



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