DECODING WHAT CONSUMERS REALLY WANT

How to Accelerate Innovation with AI-Enabled Consumer Insights (AICI)

PRESCOUTER

Acquisition and interdepartmental communication regarding consumer pain points and preferences is **cumbersome**, increasing the time & cost of product development.

AI-Enabled Consumer Insights

Save time through automated and continuous consumer sentiment monitoring.

Support better **decision making** in real time.

Reduce costs by analyzing large datasets and eliminating the need to conduct surveys or interviews with a limited number of participants.

AI-enabled consumer insights **saves weeks to months** of data acquisition, analysis, and communication, helping optimize and make product development decisions faster.

PRESCOUTER

An unprecedented opportunity exists to equip innovation teams directly with consumer insights. By using AI in product development, consumer brands can bring new products to market faster and more cost-effectively.

INNOVATION TEAMS NEED ACCESS TO CONSUMER INSIGHTS

Providing market feedback to technical innovations teams, via your market research team, can be cumbersome, ultimately increasing the time and cost required to launch products. An opportunity exists to equip your product development team with AI-enabled consumer insights, providing data-driven feedback on consumer behaviors, needs, and preferences, to quickly inform technical product development decisions, as you craft your champion prototypes.

At PreScouter, we are already working with clients in areas such as cosmetics, fashion, and cannabis to build custom AICI solutions, helping our clients save time, make better decisions, and get products to market faster.

CASE STUDY: A MENTAL WELLNESS PRODUCT

In this Intelligence Brief, we showcase the combination of PreScouter's custom AI-Enabled Consumer Insights (AICI) analysis with PreScouter's technical analysis capabilities to inform early-stage product development. This process provides innovation teams with answers to the following product development questions:

- Our marketing team found an opportunity to launch a mental wellness supplement, but they don't have the bandwidth to support the prototyping process for another 6 months, **how do we keep this project moving forward?**

- We found several efficacious ingredients aligning our "backed by science" brand: which ingredients are popular amongst consumers? Which other ingredients should we should consider? What time of day do people use these products? Are there consumer behaviors that we should consider?

Key takeaways

from this Intelligence Brief

1

AI is already being used to reduce costs, make decisions faster, and improve ROI. Despite its potential, many companies still struggle with leveraging AI to enable significant cost savings or optimized product development.

2

Bring superior products to market faster - AICI can be paired with technical product development to iterate quickly and efficiently

3

Don't expect off-the-shelf AI solutions to just 'work'.

You will need a **trusted partner** to understand your specific needs and build a tailored solution.

4

Compared to traditional in-person surveys, AICI is **faster** and more **cost-effective** while enabling continuous monitoring from multiple data sources.

5

PreScouter's AICI and clinical data analyses reveal **Ashwagandha** as the **most efficacious** and **popular mental wellness ingredient amongst consumers**.

Killing the Focus Group

AI-Enabled Consumer Insights (AICI)

Importance of AI Consumer-Driven Insights

AICI platforms harness data from multiple sources (social, search, survey, and more) and apply advanced AI and data-mining algorithms to uncover predictive and prescriptive insights. These solutions operationalize AI and extend its value beyond market research and customer insights groups, which include product development and innovation [1].

Currently, shopping activities are moving online and emerging technologies such as AI, chatbots, and virtual reality are disrupting antiquated data collection processes enabling new ways to gather and analyze consumer data. Thus, market research is reimagined by tapping into new datasets of consumer behavior that are vast, high-quality, and updated in real time [2].

PAPER → TELEPHONE → ONLINE → MOBILE

Increased Reach

Decreased Cost
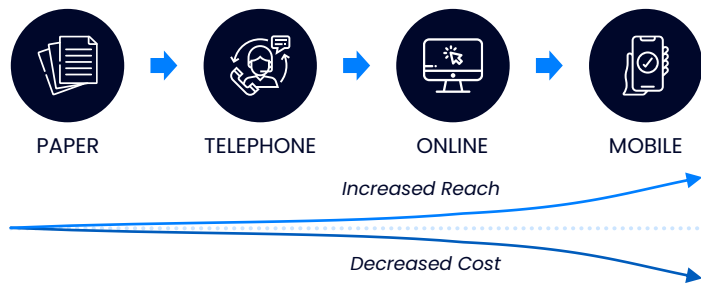
Evolution of market research with technology development. *Source: CB Insights.*

"Don't expect off-the-shelf solutions to just 'work'.

SCIENCE · TECHNOLOGY · KNOW-HOW
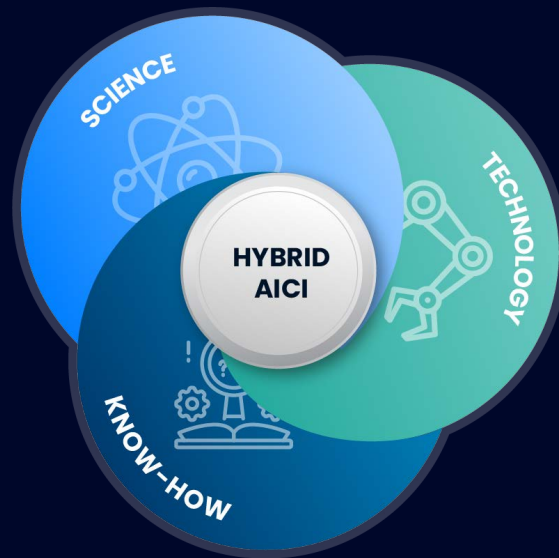
HYBRID AICI

Hybrid AICI combines SaaS technology, advanced analytics, and human expertise. *Source: Ipsos Views*
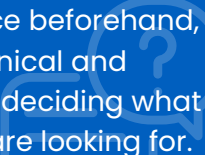
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PreScouter's AI-Enabled Consumer Insights (AICI)

AI can glean astounding insights from consumer data such as that found in social media conversations. However, like any tool, the quality of the outputs depends on the quality of the inputs. PreScouter understands that keeping the human in the loop is required to achieve actionable, customized, insights. That's why we do not offer just an AI platform, but an AI-enabled service supplemented by intelligence from PreScouter's network of PhD-level analysts and overseen by PreScouter's Project Architects.

Here's what PreScouter does differently:

AI is great in concept, but it is difficult to gain meaningful insights from generic models, and training a custom model requires significant investment of time and money. PreScouter simplifies this process by combining AI analysis with our proven approach to quickly and efficiently achieving actionable insights.
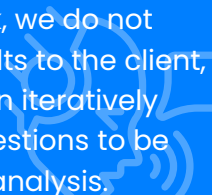
WE ASK THE RIGHT QUESTIONS

We have the capability and skills to research the space beforehand, assessing both technical and market data, before deciding what consumer data we are looking for.
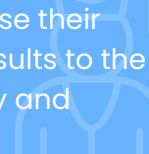
WE MAKE BUILDING THE AI MODEL A CONVERSATION

As with all our work, we do not simply deliver results to the client, but engage them in iteratively developing the questions to be addressed by the analysis.

WE HAVE THE RIGHT RESOURCES TO PERFORM SOPHISTICATED FINE-TUNING OF THE MODEL

Our PhD-level analysts use their expertise to refine the results to the desired level of accuracy and precision.

What makes this different is coupling the automated AI analysis with PreScouter's human network.

> "The insights obtained from AI-enabled Consumer Intelligence (AICI) provide a cost-effective way to objectively understand consumer sentiment across consumer goods categories. These insights can supplement or even replace traditional surveying, leading to a more personalized consumer experience.

Daniel Morales, PhD
PreScouter Technical Director

A Case Study for AICI

Mental Wellness
Product Development

Mental Wellness Market

Key players

SkillPath

curalinc
HEALTHCARE

Wellsource

amare
GLOBAL

FranklinCovey

Pyramid Healthcare
AN INTEGRATED BEHAVIORAL HEALTHCARE SYSTEM

Largest region
North America
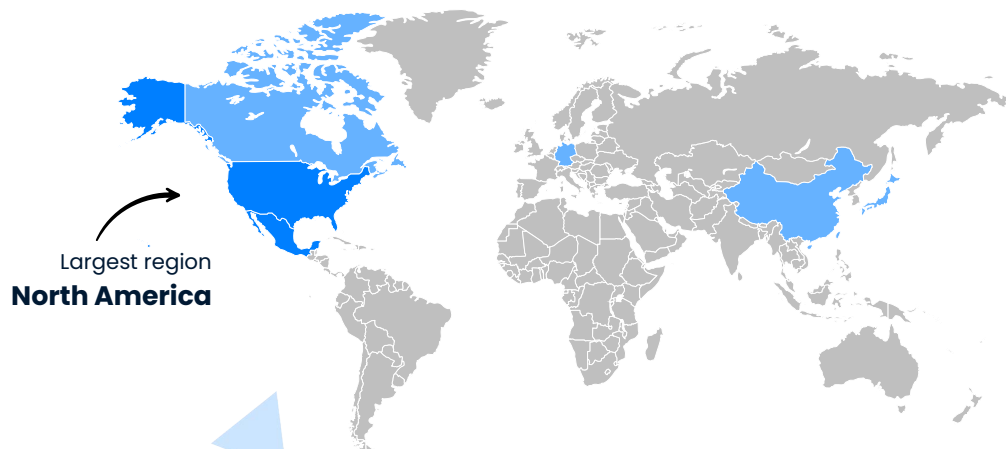
Mental wellness was a **$140 billion market in 2022** and is estimated to reach **$280 billion by 2030** at a **CAGR of 7.5–8.0%** (forecast period 2022-2030) [3][4].
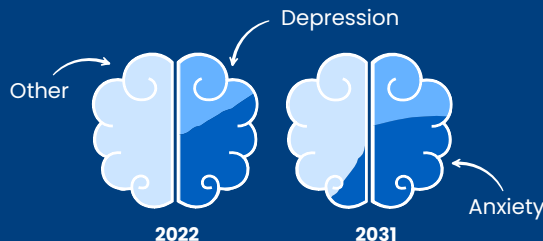
In terms of revenue, North America dominates the global market for mental wellness as its population is more involved in mental health initiatives [4]. The top 5 markets are the **USA**, **China**, **Japan**, **Canada**, and **Germany** [5].

2030
$280 billion

CAGR of
7.5–8.0%

2022
$140 billion

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Depression

Other

Anxiety

2022   **2031**

Based on disorder, **anxiety** and **depression** segments are the major contributors to the mental wellness market [4].

3 Globe News Wire, 2022
4 Insight Ace Analytic, 2024
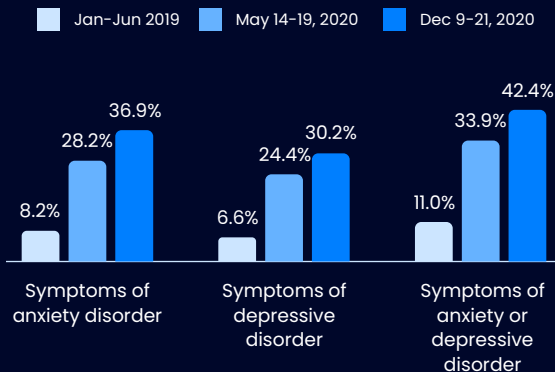5 Global Wellness Institute, 2023

Opportunities & Challenges in the Mental Wellness Market

Rapidly expanding supplements market around the COVID-19 pandemic, driven by consumer demand for holistic well-being, which includes mental health solutions [6].

Prevalence of mental health and substance disorders. Over 15% of the global population suffers from mental and substance use disorders; dementia is on the rise; **happiness is on the decline** in many countries; and **stress**, **worry**, **sadness**, **burnout**, and **loneliness** are increasing around the world [7].
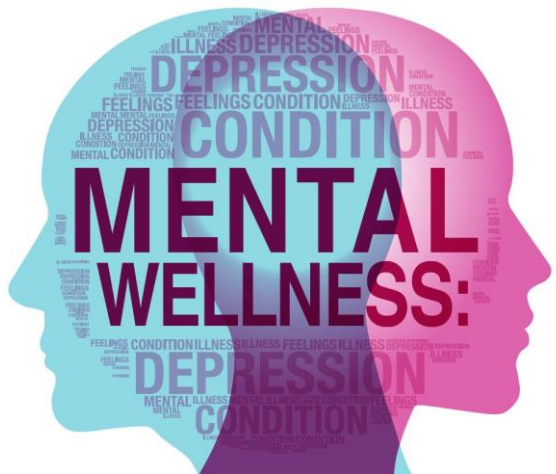
Percentage of US adults showing symptoms of anxiety and/or depressive disorder.

■ Jan-Jun 2019   ■ May 14-19, 2020   ■ Dec 9-21, 2020

Symptoms of anxiety disorder
- 8.2%
- 28.2%
- 36.9%

Symptoms of depressive disorder
- 6.6%
- 24.4%
- 30.2%

Symptoms of anxiety or depressive disorder
- 11.0%
- 33.9%
- 42.4%

* Based on self-reported frequency of anxiety and depression symptoms. They are derived from responses to the first two questions of the eight-item Patient Health Questionnaire (PHQ-2) and the seven-item Generalized Anxiety Disorder (GAD-2) scale.

Source: CDC, NCHS, U.S. Census Bureau

Note: Pandemic causes spike in Anxiety & Depression.

Source: WEF.

6 Nutrition Insight, 2023
7 Well to do Global, 2020

Many consumers now value personalization more than a few years ago and consumers are increasingly looking for **wellness-related services**, not just products [8].

Digital and social channels are becoming more influential. **E-commerce in the wellness market increased** during the COVID-19 pandemic with American consumers willing to **purchase vitamins and supplements online increasing** from 40% to 60%.

New delivery formats are on the rise that that are more convenient, effective, and enjoyable for consumers [6].

Demand for products with **natural**, **clean-label**, and **trusted ingredients** with **clinically substantiated claims** [8][6].
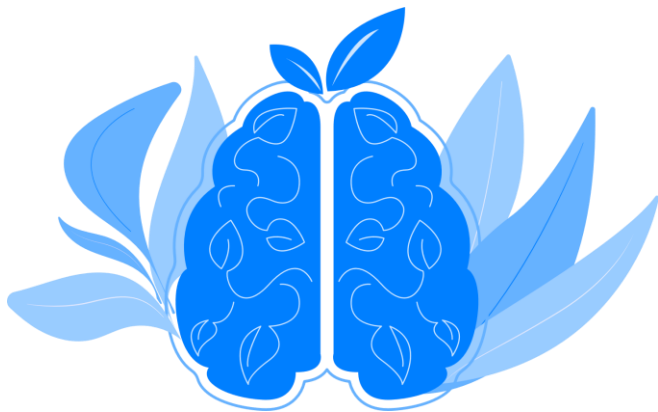
Hyper-personalization and mass-customization

Personalization will be the key differentiating factor among consumer goods brands. In this Intelligence Brief, we look at the demand for personalized goods, speak to a Professor of Marketing about the hyper-personalized production of consumer goods, and explore seven technologies enabling personalized production.
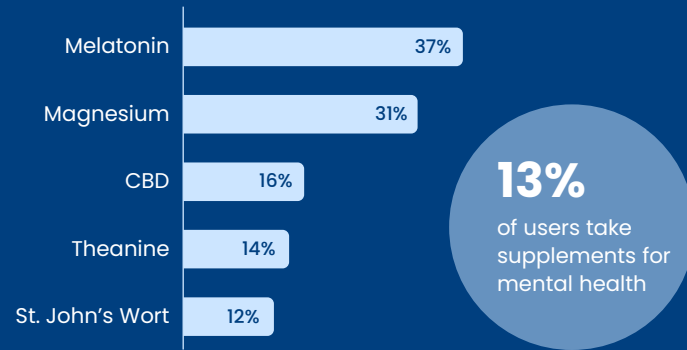
Get your free copy
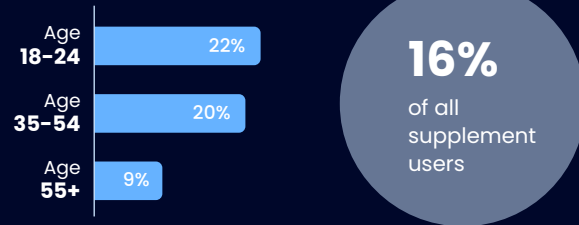
Mental Wellness Supplements

Diet may be related to mental health, but the effect is complex, and its mechanisms are yet to be fully understood. On the other hand, **supplements have garnered renewed interest for addressing mental health issues.** Popular supplements in this space include ashwagandha, curcumin, D-serine, fish oil, kava, saffron, and sarcosine [9].

The usage of mental health supplements is most prevalent amongst those aged 18-54 [10].

Melatonin — 37%
Magnesium — 31%
CBD — 16%
Theanine — 14%
St. John's Wort — 12%

13% of users take supplements for mental health

The top 5 Mental Health Supplements taken by Americans in 2020. *Source: NPI.*

Age 18-24 — 22%
Age 35-54 — 20%
Age 55+ — 9%

16% of all supplement users

2019 CRN Consumer Survey on Dietary Supplements. *Source: CRN USA.*

9 Examine, 2022
10 CRN USA, 2019
11 Natural Products Insider, 2020

Anxiety

- Saffron   - Ashwagandha   - Kava   - Lavender
- Theanine   - Curcumin   - Rhodiola rosea
- Cannabidiol (CBD)   - Gotu Kola   - Bacopa Monnieri
- Black Cohosh   - Clary sage   - Fish Oil
- Holy Basil   - Inositol   - Kanna   - Lemon Balm
- Lion's Mane   - Magnesium   - Nicotine
- Red Clover Extract   - Tongkat Ali   - Valerian
- Vitamin B6   - Vitamin C   - Yohimbine

Depression

- Saffron   - Fish oil   - Curcumin   - Inositol
- Zinc   - Creatine   - Magnesium   - Rhodiola rosea
- S-Adenosyl Methionine   - Coenzyme Q10
- Folic Acid   - Ginkgo Biloba   - L-Carnitine
- Chromium   - L-Tyrosine   - Lion's Mane   - Maca
- Lion's Mane   - Magnesium   - Nicotine
- Nefiracetam   - Red Clover Extract   - Sauna
- Theanine

Stress

- Ashwagandha   - Rhodiola rosea   - Theanine
- Alcohol   - Cannabidiol (CBD)   - Cocoa extract
- Kanna   - L-Tyrosine   - Lemon Balm   - Magnesium
- PQQ   - Patchouli   - Phosphatidylserine   - Saffron

How do you cut through the noise of the available mental wellness supplements?

Main supplement ingredients used to support management of conditions such as Anxiety, Depression, Stress, Mental Resilience, Mood Improvement, and General Mental & Brain Health.

Mental Resilience

- Rhodiola rosea   - Theanine   - Bacopa monnieri
- Branched-chain amino acids   - Cannabis
- Kava   - L-Tyrosine   - Lemon balm
- Phosphatidylserine   - Soy Lecithin
- Tongkat Ali   - Vitamin C   - Yohimbine

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Mood Improvement

- Fish oil   - Theanine   - Cannabidiol (CBD)
- Cannabis   - Lemon balm   - Panax ginseng
- Bitter orange   - Cocoa Extract   - D-Serine
- Ginkgo Biloba   - Green Tea Extract   - Kanna
- Kava   - Lavender   - Maca   - Peppermint
- Phosphatidylserine   - Rhodiola Rosea
- Rose Essential Oil   - Saffron   - Tongkat Ali
- Vitamin C   - Zinc

General Mental & Brain Health

- Cannabis   - Theanine   - Ashwagandha
- Bacopa Monnieri   - Creatine   - Fish Oil
- Panax Ginseng   - Caffeine   - Chlorogenic Acid
- DHEA   - Iron   - Kava   - L-Tyrosine
- Lavender   - Melatonin   - Nicotine   - Rhodiola Rosea
- - S-Adenosyl Methionine   - Saffron   - Tongkat Ali
- Vitamin E   - Yohimbine

Science Meets AICI

Creating Efficacious Products Aligned with Consumer Behaviors

Case Study Learning Objective Questions

- What active ingredients could be used in a consumer product to support management of anxiety, depression, stress and support mental resilience, improve mood, and contribute overall positively to overall mental & brain health?

- Which ingredients have the highest potential to achieve beneficial outcomes?

- For the most promising ingredients with clinical efficacy, which are most popular amongst consumers?

- What are the specific mental health categories should we target?

- What co-ingredients should we consider formulating with?

- What product format and dosages are typically discussed by consumers?

- Are there consumer behaviors providing an opportunity for additional products for a line of mental health products?

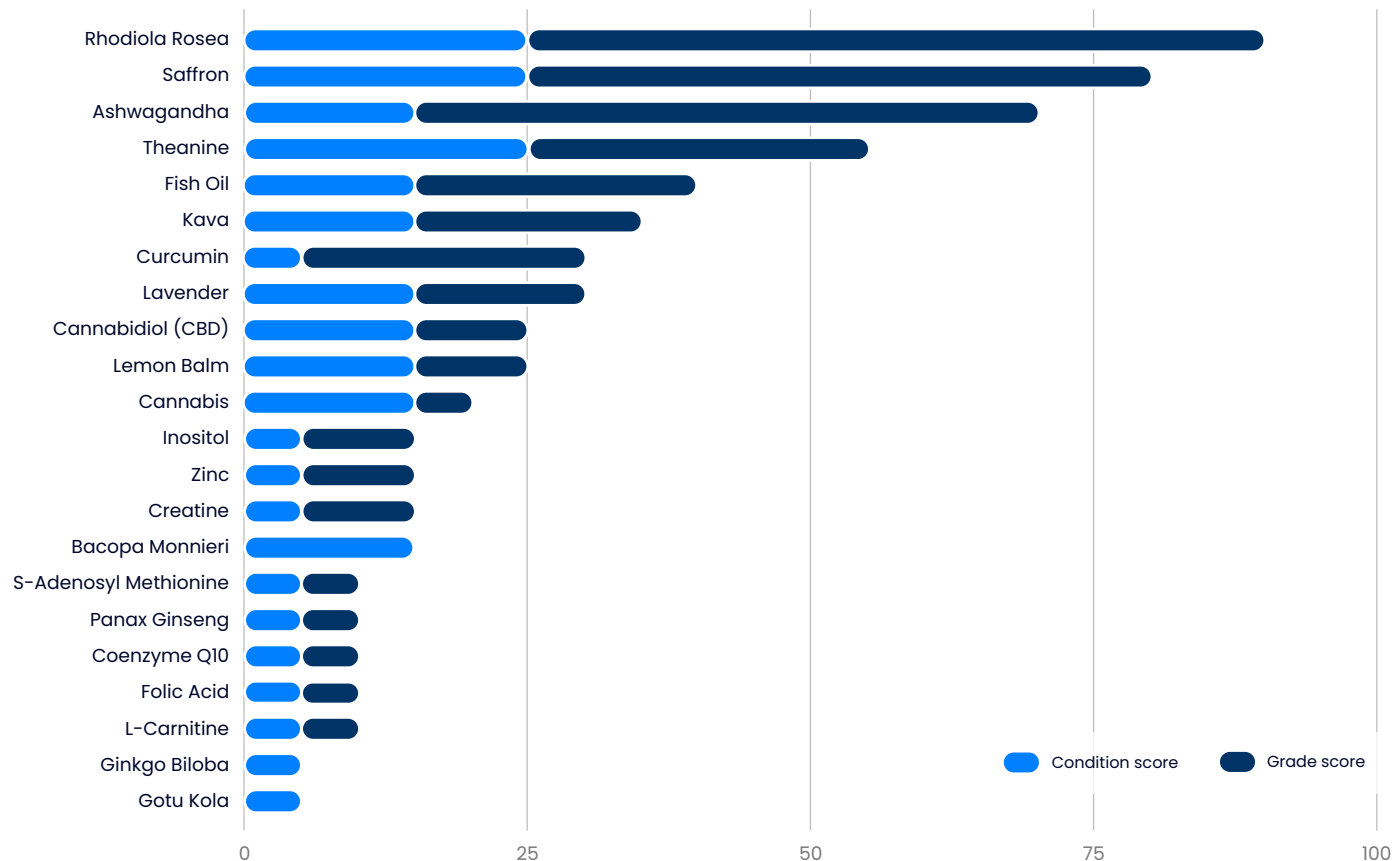- How could the timing of product launch be optimized?
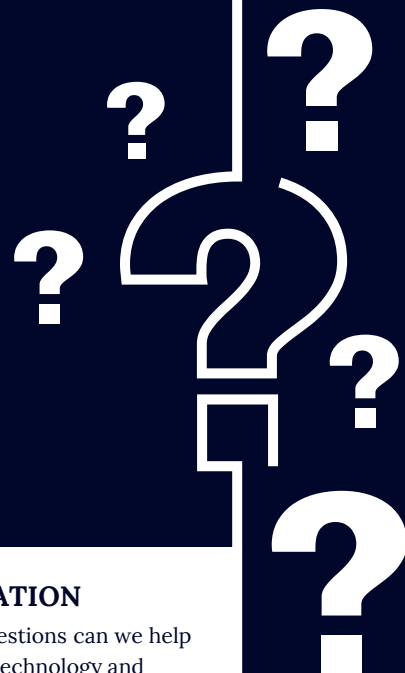
CUSTOMIZATION

What unique questions can we help answer, from a technology and consumer behavior standpoint, that would support and inform your product development and innovation decisions?

22 active ingredients to support management of anxiety, depression, stress, and supporting mental resilience, mood improvement, and overall mental & brain health.

|	Anxiety	Depression	Stress	Mental Resilience	Mood Improvement	General Mental & Brain Health
Saffron	✓	✓	✓	✗	✓	✓
Fish Oil	✓	✓	✗	✗	✓	✓
Rhodiola Rosea	✓	✓	✓	✓	✓	✓
Theanine	✓	✓	✓	✓	✓	✓
Ashwagandha	✓	✗	✓	✗	✗	✓
Curcumin	✓	✓	✗	✗	✗	✗
Kava	✓	✗	✗	✓	✓	✓
Lavender	✓	✗	✗	✗	✓	✓
Cannabis	✗	✗	✗	✓	✓	✓
Cannabidiol (CBD)	✓	✗	✓	✓	✓	✗
Inositol	✓	✓	✗	✗	✗	✗
Zinc	✗	✓	✗	✗	✓	✗
Creatine	✗	✓	✗	✗	✗	✓
Lemon Balm	✓	✗	✓	✓	✓	✗
S-Adenosyl Methionine	✗	✓	✗	✗	✗	✓
Panax Ginseng	✗	✗	✗	✗	✓	✓
Bacopa Monnieri	✓	✗	✗	✓	✗	✓
Ginkgo Biloba	✗	✓	✗	✗	✓	✗
Gotu Kola	✓	✗	✗	✗	✗	✗
Coenzyme Q10	✗	✓	✗	✗	✗	✗
Folic Acid	✗	✓	✗	✗	✗	✗
L-Carnitine	✗	✓	✗	✗	✗	✗

Rhodiola, Saffron, and Ashwagandha, have the strongest clinical efficacy amongst ingredients associated with the mental wellness areas of interest, and were selected for AICI analysis.

Ingredient	
Rhodiola Rosea	
Saffron	
Ashwagandha	
Theanine	
Fish Oil	
Kava	
Curcumin	
Lavender	
Cannabidiol (CBD)	
Lemon Balm	
Cannabis	
Inositol	
Zinc	
Creatine	
Bacopa Monnieri	
S-Adenosyl Methionine	
Panax Ginseng	
Coenzyme Q10	
Folic Acid	
L-Carnitine	
Ginkgo Biloba	
Gotu Kola	

Condition score   Grade score

An ingredient **condition score** indicates how broadly applicable the ingredient is to the mental wellness areas of interest.

An ingredient **grade score** indicates how potentially beneficial the intervention is for a given outcome and is based on a formula incorporating the number of trials, consistency of evidence, and effect sizes.

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On social platforms discussing supplements and mental health, Ashwagandha is consistently the **most discussed overtime**, relative to Rhodiola and Saffron.

30-day moving average
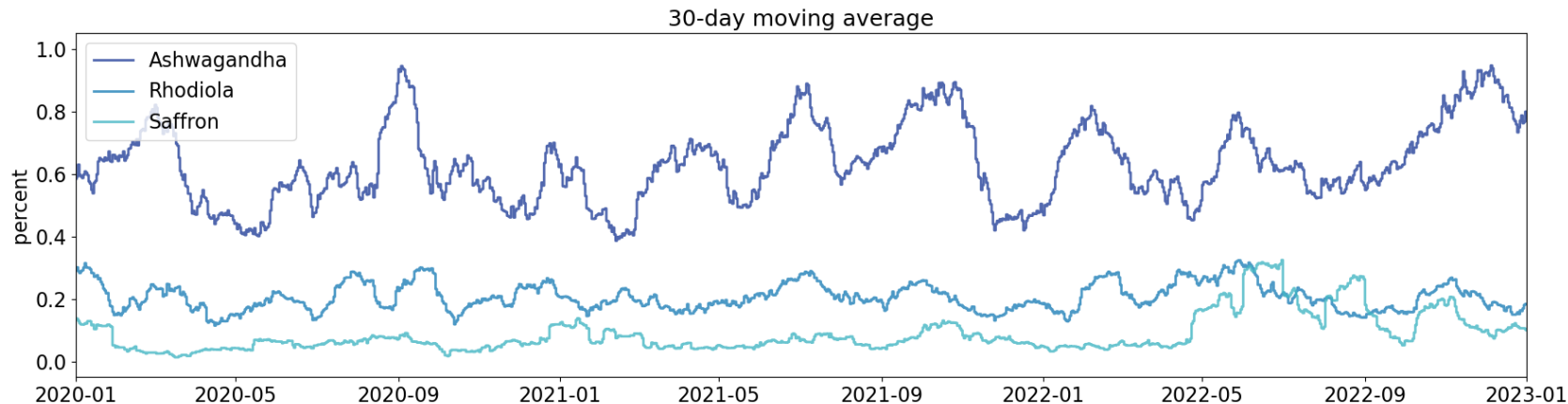
TIMING IS KEY
An Ashwagandha product launch could be timed according to the cyclical nature of social conversations to capitalize on buying interest.

Ashwagandha co-ingredients with mental health benefits to consider include Theanine, Vitamin-D, Ginseng, and Bacopa.

PreScouter's **interactive retrieval-augmented generation (RAG)** tool can rapidly assess answers to specific questions using the social platform discussions (see below), which PreScouter validates with quantitative machine learning analysis.

Q. **What are the top substances that ashwagandha is combined with (from most to least frequently cited)?**

A. The top substances that ashwagandha is often combined with are magnesium, zinc, vitamin D, Vitamin C, and boron. Magnesium and zinc are important for maintaining healthy testosterone levels, while Vitamin D can help with mood and bone health. Vitamin C and boron both have antioxidant properties which can help reduce inflammation and protect the body from oxidative stress.

Q. **What are the top substances that ashwagandha is compared against (from most to least frequently cited)?**

A. The top substances that ashwagandha is compared against are: **rhodiola rosea**, **bacopa monnieri**, **ginseng**, **magnolia bark**, and **theanine**. These substances are typically compared for their effects on anxiety, stress, cognitive performance, and sleep.

Pairwise Analysis of Potential Co-Ingredients
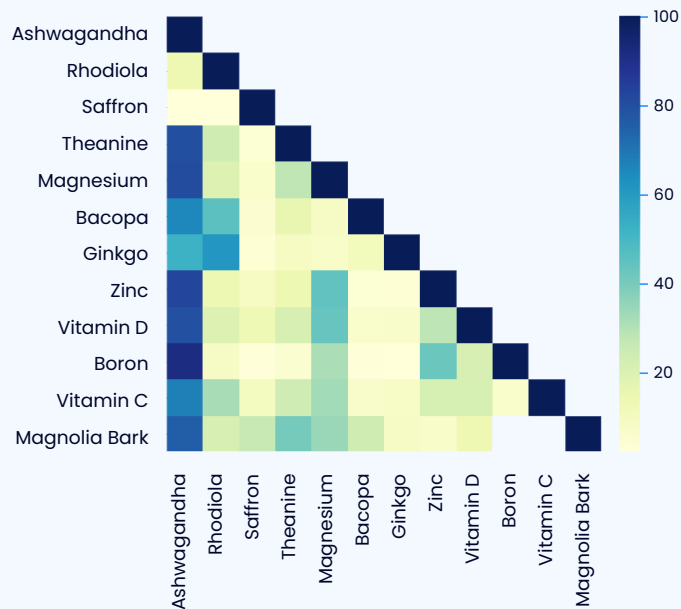
Ashwagandha would benefit from being marketed as reducing anxiety + stress, and may be paired with another product to align with consumer "adaptogen cycling"

Q. **What are the top conditions supported by ashwagandha (from most to least frequently cited)?**

A. The top conditions supported by ashwagandha, from most to least frequently cited, are **anxiety**, **stress**, insomnia, depression, and chronic fatigue.

Q. **In what dosages do people take ashwagandha, what dosage forms are most common for ashwagandha, and what times of day is ashwagandha most frequently taken?**

A. Ashwagandha is available in various forms, including capsules, tablets, powder, and liquid extracts. The most **common form** in which it is taken is in extract **capsules**, with individuals taking dosages ranging from **600 – 6000 mg**. Ashwagandha is most often taken in the late afternoon or early evening as it can be quite sedating.

It is also recommended to cycle Ashwagandha with another adaptogen, such as L-Theanine or Tulsi, rather than taking it every day.

Analysis of Supported Conditions

Legend: Anxiety, Depression, Stress, Cognitive Function
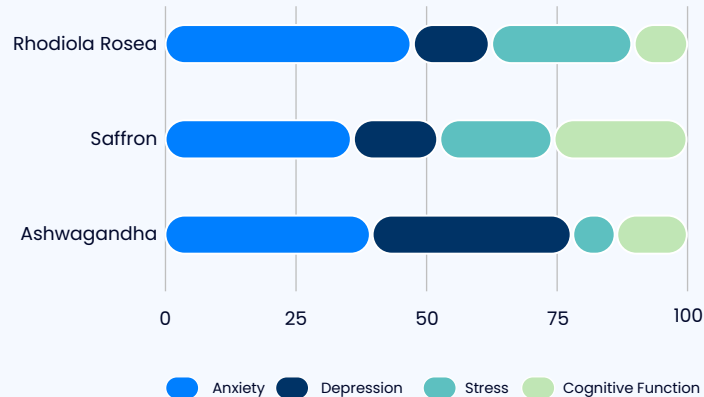
Product Recommendations Based on Consumer Data-Driven Insights

- Based on clinical efficacy & consumer interest, the core active ingredient should be Ashwagandha.

- Co-ingredients to consider in the formulation include Theanine, Vitamin-D, Ginseng, and Bacopa, as these are discussed by consumers in combination with or as alternatives to. Furthermore, Bacopa and Ginseng are discussed in combination with the leading efficacious ingredient, Rhodiola.

- The product should focus on addressing anxiety and stress.

- Consumer "adaptogen cycling" can be leveraged to create additional product pairings for a suite / kit of mental wellness products.

- In order to be differentiated from the current product format and align better with consumer evening usage, the product should consider alternative formats to the commonly used capsules. For example, tea (e.g. Good Pharma, tea discs (e.g. iLOLA), and chocolates.

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How can I implement these strategies in my business? By asking the right questions and by conducting due diligence.

➡️ What **data** do you have on your products and your customers?

➡️ **Which products** in my company's portfolio are most suited to customization and personalization?

➡️ **Market research** - confirm that the general trends towards personalization also apply to your industry - what do your customers value?

➡️ **Market analysis** - search for emerging trends in personalization in your industry.

➡️ **Patent landscaping** - check who else is protecting the use of personalization technology in your industry.

➡️ **Identify potential partners or collaborators** - Search for suppliers of technology and services that could support your implementation.

PreScouter can help you throughout this process and speed up your decision-making process.

Let's talk

About the Authors

Daniel Morales, PhD

Technical Director

Daniel is the Technical Director for PreScouter's consumer goods practice. He has led over 100 projects, spanning across areas such as innovation strategy and road mapping, product and process improvement and development, sustainability, and technology trends throughout the CPG industry.

Daniel earned his PhD in Chemical Engineering from NC State University, where his research focused on developing stimuli-responsive polymer networks for microrobotics applications. After his graduate studies, he completed postdoctoral work at INSA Toulouse, France where his work focused on the intersection of nanoparticle assembly, nanofabrication, and microfluidics to develop novel sensors. Before joining PreScouter, Daniel gained industrial experience in pharma manufacturing, polymer processing, and science manuscript editing. He is based in Raleigh, North Carolina.

Charles Wright, PhD

Director of Data Innovation

Charles is the Director of Data Innovation at PreScouter. He graduated with a BA in Physics, Molecular and Cellular Biology, and Spanish from Vanderbilt University, then earned his PhD in Biophysical Sciences from the University of Chicago before working as a Postdoctoral Scholar in the Physics Department at Purdue University. His academic research focused on developing integrated experimental–computational pipelines to establish a quantitative understanding of dynamic and stochastic biological phenomena. Charles splits his time between Tennessee and Thailand.

Garrett Wheaton, PhD

Project Architect

Garrett earned his PhD in Chemical & Biomolecular Engineering from NC State University, where his research focused on metal biooxidation, resistance and toxicity in thermoacidophiles. After his graduate studies, he worked at a cannabinoid infusion technology startup, offering highly effective and bioavailable delivery solutions for cannabis and hemp customers. Before joining PreScouter, Garrett gained experience in product development and commercial launch. Garrett is based in Salt Lake City, Utah.

Helmut Navarro, PhD

Analyst & Team Lead

Helmut is an analyst and team lead for PreScouter's CPG and F&B vertical. He transitioned to the corporate environment as a Scientific Consultant after 10+ years of experience in academia as a Researcher focused on Processes of the Food and Chemical Industry.

Helmut holds a PhD in Food Engineering from the Federal University of Santa Catarina, Brazil, researching the technical and economic viability of the catalyst-free production of fatty acid alkyl esters in supercritical alcohols. He also performed two years as a lecturer for undergraduate and graduate Chemical Engineering courses at the Federal University of Santa Maria, Brazil, where he completed postdoctoral work on beta-glucans extraction and purification from mycelia cultivated with intensified fermentation processes.

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Our model leverages a network of 4,000+ advanced degree researchers, industrial experts, engineers, and analysts across the globe to tap into information from small businesses, national labs, markets, universities, patents, startups, and entrepreneurs.

CLIENTS RELY ON US FOR

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Privileged Information: PreScouter interviews innovators to uncover emerging trends and non-public information.

Customized Insights: PreScouter finds and makes sense of technology and market information to help you make informed decisions.

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