From the U.S. to Europe:
The Challenges and Opportunities of Expanding American Prebiotic Soda Brand, Poppi

A Study of Consumer Perceptions, Market Viability, and Marketing Strategies in a Cultural Context

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ABSTRACT

From the U.S. to Europe: The Challenges and Opportunities of Expanding Prebiotic Sodas A Study of Consumer Perceptions, Market Viability, and Marketing Strategies in a Cultural Context.

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The functional beverage industry has seen rapid growth in recent years, driven by increasing consumer interest in health and wellness. In particular, prebiotic sodas have emerged as a promising category, offering gut health benefits while serving as an alternative to traditional soda. However, the market for prebiotic sodas in Europe remains untapped compared to the United States. This study investigates consumer perceptions, purchase intent, and market barriers for prebiotic sodas in Europe, using Poppi as a case study.

A survey of 133 valid respondents, including a sample of European consumers, examined factors such as awareness, price sensitivity, trust in health claims, and taste vs. health prioritization. Statistical analyses, including Chi-Square tests, ANOVA, and Wilcoxon Signed-Rank tests, were conducted to determine key purchase drivers.

Findings indicate that awareness of prebiotic sodas is significantly lower in Europe than in North America, but openness to trying new beverages remains high. Price sensitivity did not significantly impact purchase intent, suggesting that premium branding should be prioritized over affordability. European consumers prioritize health benefits over taste, but regulatory restrictions in the EU limit the effectiveness of gut-health-focused marketing. Instead, emphasizing natural ingredients, fiber content, and effective brand storytelling may be a more beneficial approach.

This study applies Hofstede's cultural dimensions framework to analyze consumer behavior and provides strategic recommendations for branding, product positioning, and market entry strategies to optimize Poppi's potential success across Europe.

Keywords: Prebiotic sodas, Functional beverages, Consumer behavior, Market entry strategy, Health claims regulation, Cultural adaptation, Purchase intent.

RESUMO

Dos EUA à Europa: Os Desafios e Oportunidades da Expansão das Sodas Prébioticas
Um Estudo sobre Percepções do Consumidor, Viabilidade de Mercado e Estratégias de Marketing em um Contexto Cultural

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A indústria de bebidas funcionais tem crescido rapidamente, impulsionada pelo maior interesse dos consumidores em saúde e bem-estar. As sodas prebióticas surgiram como uma alternativa promissora aos refrigerantes tradicionais, oferecendo benefícios para a saúde intestinal. No entanto, seu mercado na Europa ainda é pouco explorado em comparação com os Estados Unidos. Este estudo investiga percepções do consumidor, intenção de compra e barreiras de mercado para sodas prebióticas na Europa, utilizando a marca Poppi como estudo de caso.

Uma pesquisa com 133 participantes, incluindo consumidores europeus, analisou fatores como conhecimento do produto, sensibilidade ao preço, confiança em alegações de saúde e priorização do sabor versus benefícios à saúde. Foram aplicadas análises estatísticas, incluindo Testes Qui-Quadrado, ANOVA e Wilcoxon Signed-Rank, para identificar os principais fatores que influenciam a decisão de compra.

Os resultados mostram que a consciência sobre sodas prebióticas é menor na Europa, mas há alta receptividade a novas bebidas. A sensibilidade ao preço não impactou a intenção de compra, indicando que o posicionamento premium é mais relevante que a acessibilidade. Consumidores europeus priorizam benefícios à saúde sobre o sabor, mas restrições regulatórias na UE limitam o marketing focado na saúde intestinal.

Este estudo aplica a estrutura cultural de Hofstede para analisar o comportamento do consumidor e propõe estratégias para branding, posicionamento de produto e entrada no mercado, visando otimizar o sucesso da Poppi na Europa.

Palavras-chave: Sodas prebióticas, Bebidas funcionais, Comportamento do consumidor, Estratégia de entrada no mercado, Regulação de alegações de saúde, Adaptação cultural, Intenção de compra.

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I. Introduction

The functional beverage industry has expanded rapidly, specifically prebiotic sodas in the U.S.. Driven by growing consumer demand for healthier alternatives to classic sodas and a sober curious movement, prebiotic sodas have gained traction in the U.S. as consumers seek products that support gut health, digestion, and overall wellness. Unlike probiotic drinks, such as kombucha, prebiotic sodas contain fiber-based, all-natural ingredients that promote the growth of beneficial gut bacteria while living up to a more familiar taste of traditional soda.

Despite the success of prebiotic sodas in the U.S., they lack presence in Europe, aside from the UK. Differences in consumer awareness, trust in health claims, regulatory policies, and cultural attitudes toward functional beverages may pose barriers to international expansion. Poppi, America's leading prebiotic soda brand, must acknowledge and navigate these challenges to determine its viability in the European market.

The overarching research question addressed throughout this report is: *Can Poppi succeed in the European market, and what factors influence European consumers' willingness to adopt and purchase prebiotic sodas?* The study explores: Consumer Awareness & Purchase Intent (Do European consumers have lower awareness of prebiotic sodas, and if this affects their likelihood to purchase?), Price Sensitivity & Willingness to pay (Is price a significant barrier to adoption, or do consumers value health benefits enough to pay slightly more?), Health vs Taste Prioritization (Do European consumers prioritize health benefits over taste, and does this differ from North American preferences?), Trust in Health Claims (How do regulatory restrictions and consumer skepticism impact the marketing of prebiotic sodas?), and Cultural & Market Differences (How do Hofstede's cultural dimensions influence beverage consumption behavior?).

Understanding these factors is critical for brands like Poppi to expand to Europe successfully. The remainder of this study provides consumer insights identifying key motivators for the adoption of prebiotic sodas in Europe. It will also address strategic marketing recommendations for Poppi to tailor its messaging, branding, and distribution strategies to fit the European market. The study will dive deeper into EU health claims and labeling restrictions so Poppi can avoid legalities. Lastly, it will use Hofstede's cultural dimensions to refine marketing strategies based on regional differences so that Poppi is more likely to be adopted.

II. Literature Review

2.1. Introduction to Prebiotics and Functional Beverages

Functional beverages are a rapidly growing division within the health and wellness market as well as the soda industry. A non-alcoholic beverage that provides health benefits beyond hydration. Consumers are increasingly seeking beverages that provide both nutritional and functional benefits while maintaining a satisfactory tasting and drinking experience. One functional beverage that is taking the United States consumeristic population by storm is prebiotic soda, a soda alternative that contains prebiotics, natural ingredients, lower sugar content, and fiber, but with the same delicious fizzy and flavorful taste that mainstream sodas do. Prebiotics are "non-digestible fibers that stimulate the growth of beneficial gut bacteria, distinguishing them from probiotics, which introduce live bacteria into the digestive system" (Smith et al., 2020). In simple terms, prebiotics are "food" that helps probiotics thrive in the gut biome. They are linked to effective and efficient digestion, immunity, and overall well-being. Not to mention, prebiotic sodas are a great alternative for those looking to decrease their sugar or caloric intake while enjoying the taste of the sodas they love most.

Although there is yet to be a prebiotic soda in the European Union (EU), a key player in the prebiotic soda industry is the American brand, Poppi (Figure 1). Founded by a husband-wife duo in Austin, Texas, each can of Poppi combines fruit juice, apple cider vinegar, and inulin prebiotics (*Our Story – Poppi*, n.d.). Inulin prebiotics are a naturally occurring compound, polysaccharide, found in plants such as wheat, onion, banana, garlic, and leek (Roberfroid, 2002, S129-S143). Poppi now offers 16 flavors, some mimic the taste of classic sodas, such as the Classic Cola is a consumer alternative to Coca-Cola. Other flavors are more unique, for example, Watermelon, Raspberry Rose, and Cranberry Fizz. All Poppi cans contain less than 5 grams of sugar, and apple cider vinegar (ACV) is less than 25 calories and contains organic inulin agave to support healthy gut bacteria such as Bifidobacteria and Lactobacilli (*Benefits 101*, n.d.). Aside from the functionality of Poppi, within their short 5 years of being a brand, Poppi has succeeded in creating and executing a memorable, lively, and effective marketing strategy and has even partnered with celebrities such as Post Malone, Kylie Jenner, and Billie Eilish, to name a few.

2.2. Regulatory Landscape

There is an increasing trend of "clean labeling" around the world in the food and beverage industry. Unlike the United States, the European Union has stiff regulations that govern the use of health claims on food and beverage labels. The government organization that oversees these demanding regulations is the European Food Safety Authority (EFSA), which mandates that all health-related claims must be backed with strong and detailed scientific evidence to be used on product labeling (Bech-Larsen & Scholderer, 2007, 231-234). In terms of labeling with the term "prebiotic", the EU requires prebiotics to demonstrate a proven physiological benefit to be marked with this label. As of today, the EU has not permitted the use of the term "prebiotic" in connection to an approved health claim, therefore, brands and manufacturers are unable to use the term on their labeling.

In the United States, on the other hand, the Food and Drug Administration (FDA) is the government agency that oversees food and beverage labeling. Currently, the term "prebiotic" does not have a standardized regulatory definition under FDA guidelines. This means that manufacturers can use the term on their product labels and marketing, but they must ensure that the labeling is truthful and not misleading to consumers, otherwise, they may face the possibility of lawsuits. The regulatory differences in terms of health claim labeling have the potential to pose significant challenges for prebiotic soda brands like Poppi in case they are considering international expansion to the EU. We will discuss how Poppi can address this challenge later in the report.

2.3. Consumer Behavior & Market Trends

Aside from the regulatory differences and challenges Poppi could face in the case they internationalize to the EU market, there are also various behavioral differences between the two regions that influence consumer buying behavior towards functional foods. Although there is an "increasing demand by the European consumer for healthier food products, so far few functional food products have reached the marketplace" (Verschuren, 2002, S125). This is likely because developing sufficient scientific support for health claims is relatively expensive, let alone time-consuming. Furthermore, some beverage manufacturers may struggle with effectively communicating diet and health-related information to consumers (Verschuren, 2002, S125).

Furthermore, in Europe, the adoption of prebiotic beverages may also vary significantly due to skepticism. If consumers are uneducated on prebiotics and their benefits, they may be less likely to purchase them. Consumer skepticism must be cleared via engaging education to drive prebiotic soda market growth. Education does not mean brands like Poppi need to make a YouTube channel informing consumers of the scientific details and benefits of prebiotics, but rather they could effectively communicate this information via their social media marketing and concise yet descriptive labeling. Educating consumers through transparent messaging and visual branding could drive greater acceptance, particularly in European markets where health claims are scrutinized. However, because the term "prebiotic" is considered a health claim in the EU, therefore requiring approval for use, the branding of Poppi in the European market may have to focus more on the visual and artistic appearance of their product or already approved terms to effectively communicate the benefits to consumers.

In terms of American consumers, they exhibit higher adoption of prebiotic beverages due to growing health trends and consistent innovative product offerings. Brands are taking advantage of consumers' obsessions with trendy new products and health, and "when favorable nutrition information or health claims are presented, consumers have more favorable attitudes toward the product, nutrition attitudes, and purchase intentions, and they perceive risks of heart disease and stroke to be lower" (Kozup et al., 2003). Creating the perfect stomping grounds for brands like Poppi.

Although there is a general increase in health trends, the U.S. is also experiencing a decrease in regular soda consumption, further paving the way for prebiotic sodas. A study from 2020 found that the sales of sugar-sweetened beverages have decreased over time, more specifically, between 2006 and 2015, regular soda sales decreased by 11.8% ($p<0.001$) (Rummo et al., 2020, 524). The finding further states that "the majority of current research on beverage trends in the U.S. has focused on self-reported individual consumption levels instead of store sales, which are vulnerable to response bias and challenging to measure".

Regarding European soda consumption, most carbonated soft drinks sold are of the cola-type (Reyes & Cornelis, 2018), and in 2019, 9% of people aged 15 and over in the EU drank soda daily, and 19% consumed soda 1-3 times a week (*How Often Do You Drink Sugar-Sweetened Soft Drinks?*, 2021). Compared to American soda consumption, even Belgium, the heaviest soda

consumer in the EU, only consumes a third of America with 20% of Belgians consuming soda one or more times a day.

2.4. Perception & Adoption

In terms of perception and adoption of prebiotic beverages, as stated previously, the U.S. is a consumeristic society, but that does not mean brands do not have to work hard to convince consumers to make the final purchase. Furthermore, studies conducted in Europe found that food neophobia, otherwise known as the tendency to avoid or be hesitant to try new foods, had a direct negative effect on consumers' attitudes toward adopting functional foods (Baker et al., 2022, 13). However, the studies also found that food neophobia did not affect German consumers' willingness to purchase functional food and beverage products, nor did it influence athletic individuals, individuals interested in the positive effects of food consumption on their health, physical performance, and body shape.

To solve the problem of food neophobia and to increase consumer perception and adoption of functional foods, and therefore prebiotic sodas, brands must address the fact that consumers tend to accept functional foods if the perceived health benefits outweigh the perceived risks. Education in the form of clear and effective marketing and labeling communication is are potential solution. In one study, people with less knowledge about functional foods increased their likelihood of buying functional foods after they received information about their health benefits (Baker et al., 2022, 14). In the same article, author La Barbera, among others, found that consumers with higher levels of knowledge about functional foods tend to pay higher prices for functional foods than those with lower levels of knowledge.

In 2007, an experimental study across Europe was conducted with 1,157 participants. The study aimed to discover the consumers' likelihood to adopt functional foods by having them test a functional soup. The findings were that European consumers were unwilling to compromise on taste for the health benefits of a functional food (Baker et al., 2022, 27). Furthermore, another study found that European "consumers between the ages of 19 and 30 were inclined to consume functional food; female consumers living in smaller households with higher incomes" were also more likely to consume functional foods" (Baker et al., 2022, 28).

2.5 Cultural Influence on Marketing

Poppi's marketing strategies must account for cultural differences that influence consumer behavior to successfully promote their prebiotic soda. Understanding cultural differences between European countries and the U.S. is crucial to effectively communicating to consumers why they should purchase and consume Poppi. One way to better understand cultural differences is via Hofstede's cultural dimensions framework. Hofstede's cultural dimensions theory provides a framework for understanding how cultural values shape purchasing decisions and brand perception. Hofstede analyzes countries based on five factors: Power Distance, Uncertainty Avoidance, Long-term Orientation, Individualism/Collectivism, and Masculinity/Femininity. He assigned indexes on each dimension to all nations, linking the dimensions with demographic, geographic, economic, and political aspects of society (Soares et al., 2007, 280).

2.6 Competitive Analysis

The European functional beverage market is characterized by well-established players, such as Coca-Cola, and emerging brands, creating a competitive landscape that demands differentiation to succeed. The focus of this analysis is to provide Poppi with insights as to whether or not it should consider expanding to the European market. Key players in the European functional beverage market include Yakult and Actimel, probiotic yogurt beverages, leveraging strong brand equity and extensive distribution networks. In 2022 and 2023, Dutch consumers consumed 169,000 bottles of probiotic dairy products per day. Italians were the second largest EU consumer of the brand at 92,000 bottles consumed per day, and Germany at 75,000 bottles per day (Yakult, 2023).

For prebiotic beverages like Poppi, entering this market requires a unique value proposition supported by strategic marketing, effective communication, and partnerships. However, the prebiotic beverage and soda market is not yet completely saturated in the EU, and Poppi has the potential to differentiate itself from the few functional beverage competitors and be one of the first prebiotic soda brands in the EU. Currently, EU member countries have yet to be the origin of prebiotic soda brands. However, there are a few brands that were started in the UK that are available for EU consumers via online purchase or in some of the Nordic EU countries. For example, the U.K. prebiotic soda brand Fhirst has secured distribution networks in the Benelux

and Nordic EU countries (Fhirst, 2024). XOXO soda, another U.K. prebiotic soda brand, has facilitated partnerships with major EU retailers such as Spar and Albert Heijn (Briggs, 2024).

III. Methodology

3.1 Research Design

A quantitative research approach will be integrated into an online consumer survey to gain comprehensive insights into American and European consumers' preferences and attitudes towards prebiotic sodas, health consciousness levels, and receptivity to soda alternatives and new functional beverage products. The survey was conducted in November of 2024 and was designed to take respondents 4-6 min to complete. As a result of their completion, they could enter into a lottery for the chance to win either a $20 or €20 Amazon gift certificate. Convenience sampling and snowball sampling were the main types of sampling used to reach voluntary participants. The advantages of conducting such information via survey are that it allows the following:

Broad Reach

Conducting a survey allows data collection from a large and diverse population, providing a comprehensive view of consumer attitudes. Online surveys, specifically, enable the researcher to collect data from consumers across a multitude of geographic regions, making it easier to gain insights into both U.S. and European consumers for comparison.

Quantifiable Data

The online survey will produce numerical data that can be efficiently and effectively analyzed to identify correlations, trends, and significant factors that influence consumer preferences toward prebiotic sodas.

Cost-Effectiveness

Online surveys are inexpensive to design and distribute, especially compared to other data collection methods like focus groups or in-depth interviews. The online survey development platform used in this research was Qualtrics. The most significant cost in terms of the online survey conducted was time, both in creating the survey and distributing it.

Standardized Responses

A survey that utilizes a structured format ensures consistency in the collected data, making it easier to analyze the data across demographics and regions. Furthermore, the standardized layout provided to each voluntary participant gave them a smooth, easier-to-understand, and intuitive navigation experience when taking the survey.

Ease of Analysis

The survey included predefined questions and scales to ensure survey responses could be easily analyzed using Qualtrics and the software SPSS.

Flexibility

Online surveys provide not only the conductor but also the participants with flexibility. The survey can include various question types, such as multiple choice, scales, and open-ended. For participants, they can easily express their responses in an easy-to-use and concise way. Participants are also able to pause their survey and finish it later at a time that works more conveniently for them.

Anonymity

Although focus groups and in-depth interviews provide the research conductor with valuable qualitative insights, participants in these types of data collection are less likely to be honest because they may be influenced by either those around them or by the conductor themself. Online surveys are just one way to mitigate inaccurate data, as respondents are often more honest in surveys because their answers are anonymous. The anonymity factor is crucial to collecting accurate data, especially when discussing sensitive topics like health or dietary habits.

Aside from the advantages of conducting an online survey to gather valuable data and insights regarding consumer preferences and attitudes towards prebiotic sodas, one must also address the disadvantages and potential challenges that may arise:

Response Bias

There is the potential for survey respondents to not answer survey questions truthfully due to social desirability bias or lack of interest in the research topic, in turn distorting the data.

Desirability bias occurs when a respondent wants to appear to the research conductor, other participants, or the general public as favorable or “correct”. Regarding this survey, participants

may feel pressure due to social norms to answer questions in a certain way. They may answer untruthfully to appear healthier, more ethical, or more socially responsible than they are. In this survey, they may report underconsumption of regular soda and a higher willingness to pay for prebiotic beverages. Desirability bias occurs most often in self-reported data where participants are aware they are participating in research and want to align with social norms. Lack of interest in the research topic, prebiotic sodas, can also influence the accuracy of the data. For example, people who are already interested in health-focused beverages and prebiotics or who actively engage in a healthy lifestyle might disproportionately respond, skewing the results. Those who are uninterested or who lack knowledge of the topic may leave the survey unfinished or mindlessly select random answers to finish promptly.

Limited Depth

Online surveys are beneficial for collecting surface-level insights, however, they lack the depth of qualitative methods like focus groups or interviews. In-depth data collection methods provide participants with open-ended questions that are more detailed but are more difficult to analyze.

Low Response Rates & Sampling Challenges

Online surveys often suffer from low response rates. Because this survey was sent out to a large number of the research conductor's contacts, the established relationship between them encouraged participants to not only fill out the survey but complete it as well in a timely manner. The downside of sending out the survey to personal contacts is a response bias due to this fostered relationship and geographical location. It is only when these participants send the survey to more people or post it on their socials that the data can be more diverse.

Misinterpretation

Poorly worded or ambiguous questions can cause participants to misinterpret what they are being asked, potentially leading them to submit a response they did not intend to and providing the research conductor with unreliable data. In terms of this survey, it was made clear at the beginning of the survey what prebiotic and probiotic sodas are to limit confusion during the rest of the survey.

Lack of Context

Surveys capture static opinions at a given time and may not account for dynamic and external factors such as current health trends and economic conditions that influence consumer preferences, attitudes, behavior, and consumption.

Identifying and understanding both the advantages and disadvantages of online surveys before survey creation and distribution can inform the research conductor's decision-making process and help them mitigate common disadvantages. Below are some ways disadvantages of online surveys can be mitigated:

Design and Pilot Testing

The survey was carefully designed and pilot-tested with both one American respondent and one European respondent. Creating a "test round" of the survey can help identify ambiguities and errors in the pilot version of the survey. Running a pilot test for a European respondent was crucial for this survey to ensure there was a similar understanding of terms used throughout the survey. For example, terms such as cafe or bar mean different things to Americans and Europeans.

Incentives

Offering an incentive, such as a small reward like a discount or gift certificate, can encourage participation in the survey. This survey offered finishing participants to enter a lottery by providing their email for the chance to win a $20 or €20 Amazon gift certificate.

Data Cleaning

Upon completion of conducting the survey, it is crucial to screen for incomplete or inconsistent responses. This will provide the research conductor with more accurate data before data analysis.

3.2 Research Questions & Choice of Material

The overarching question of this entire report is to determine whether or not the American prebiotic soda brand, Poppi, should internationalize to the European market, therefore, key research questions that can be answered through secondary research and data collection are crucial for Poppi consultants to be able to make their final decisions. The purpose of the survey is to answer the following research questions:

Demographics & Market Segmentation

1. What are the demographic profiles (e.g., country, gender, age) of potential consumers for prebiotic sodas?
2. How do demographic factors influence attitudes toward prebiotic sodas and other functional beverages?

Awareness & Familiarity

1. How familiar are consumers with prebiotic sodas and other gut-health beverages such as kombucha or kefir?
2. Where do consumers typically hear about prebiotic sodas (e.g., social media, in-store, word of mouth)?
3. What level of awareness exists about government or regulatory restrictions on health claims in consumers' countries?

Consumer Interest & Market Potential

1. How interested are consumers in trying prebiotic sodas?
2. How interested are consumers in trying prebiotic sodas as an alternative to regular sodas?
3. How likely are consumers to switch to prebiotic sodas if they taste similar to their preferred sodas?
4. How receptive are consumers in different countries to trying new types of drinks?

Consumption Habits & Preferences

1. How often do consumers purchase or consume regular sodas, diet sodas, and health-focused beverages such as kombucha, kefir, vitamin water, and prebiotic sodas?
2. Where do consumers typically consume soda?
3. What factors are most important to consumers when choosing any beverage, and soda specifically?

Price Sensitivity

1. How much are consumers willing to spend on a health-focused beverage at a restaurant or cafe and grocery store/supermarket?

Barriers to Adoption

1. What concerns may prevent consumers from choosing prebiotic sodas over regular sodas?
2. How does skepticism toward health claims influence consumer choices?

Trust in Health Claims

1. Which health claims do consumers trust most in food and beverage marketing?
2. Do consumers believe gut health is an important aspect of overall health?

Cultural Receptiveness

1. How do cultural attitudes affect the receptiveness to trying new types of beverages?
2. Are there regional differences in consumer openness to innovative products like prebiotic sodas?

Survey data will aid in answering these questions and can provide primary data on consumers' perceptions, beliefs, and attitudes toward prebiotic sodas. The survey will help identify consumer segments based on demographics and preferences while deriving key drivers and barriers to the adoption of prebiotic sodas in the European market. The survey results will provide in-depth information that can then be compared and further analyzed using Hofstede's cultural dimensions theory, in turn aiding Poppi in a more extensive and in-depth report.

The survey begins with a welcoming message to the participants, stating that their participation is voluntary, anonymous and will be used solely for academic purposes for the conductor's master's thesis at the University of Catolica-Lisbon. Furthermore, this introduction message informs the participants of how long it will take them to complete the survey, 4-6 minutes. Lastly, participants are informed that upon survey completion, they will have the chance to win a $20 or €20 Amazon gift certificate.

The second page of the survey kindly asked participants to read a brief overview of what prebiotics and prebiotic sodas are. This page is organized in a concise yet informative way for intuitive reading and comprehension. The second page of the survey states the following and includes two images of America's leading prebiotic soda brand, Poppi (Figure 1):

> Please Read
>
> In this survey, you will be asked about different types of sodas and health beverages, including a new category called prebiotic sodas.
>
> **Are prebiotics different from probiotics?**
>
> Yes! Prebiotics are fibers that feed the good bacteria already living in your gut, whereas probiotics are the live bacteria that add to the population of good bacteria in your gut. Overall, prebiotics act as food for probiotics and help them thrive.
>
> **What are prebiotic sodas?**
>
> Prebiotic sodas are carbonated beverages that contain plant fibers and other ingredients believed to support gut health. Unlike regular sodas, these beverages are typically lower in sugar and marketed as a healthier alternative.
>
> Below, you will find 2 pictures of a prebiotic soda brand currently available in the U.S.
> *These visuals serve as an example of a prebiotic soda and are not an endorsement.

Figure 1. Two images of America's leading prebiotic soda brand, Poppi.

The rest of the survey includes screening questions and a variety of question types ranging from multiple choice, drop-downs, open response, matrix, and scales (see appendix # for the full survey). Although the number of questions and question numbers were not displayed to participants, an "amount finished" visual line was displayed at the top of the screen throughout the entirety of the survey (appendix #). All participants were able to press a back button to go back to previous questions when taking the survey. They were able to pause and leave their survey to come back and finish at a later time.

Question 2.1 is the first matrix table of the survey and asks participants, "How important are the following when you are choosing any beverage?". Participants were then able to rank the following factors (e.g., health benefits, fiber content, calories, etc.) on a scale of 5: Not Important at All, Slightly Important, Moderately Important, Very Important, and Extremely Important. Question 2.2 uses the same scale but asks consumers how important the same factors are when choosing a soda. Moving forward, question 4.1 uses a scale for measuring how often the participant purchases regular soda, diet soda, and health-focused drinks, such as kombucha and kefir. The scale used was another 7-point scale: Daily (every day), 2-3 Times a Week, 4-6 Times a week, Once a week, Monthly, Rarely, and Never. However, in the survey, "4-6 Times a Week" should have been placed after "Daily" and before "2-3 Times a Week" for intuitiveness and chronological purposes. Almost all questions include an "Other" option where the participant can submit an alternative response if the respective one is not included in the response options.

In terms of survey flow (appendix 1), participants who answered that they were "not at all interested" in "trying health-focused beverages as an alternative to soda" in the screening questions, were immediately brought to the end of the survey, as their input is not vital to gaining a better understanding of whether or not Poppi should internationalize. Question 2.2 (How important are the following when you are choosing a soda?) was only displayed to respondents who did *not* answer "never" to question 1.1 (How often do you consume soda?). Question 5.4, which stated, "Where do you usually consume soda? Check all that apply." was only displayed if respondents did *not* answer "never" to question 1.1.

IV. Results

4.1. Data Cleaning

The survey dataset initially included 157 responses collected through Qualtrics. After cleaning the data of outliers and unfinished surveys in Excel, 135 valid and complete responses were moved through to the analysis stage in the software statistics SPSS. The six respondents who selected “Not at all interested” in trying prebiotic sodas at the beginning of the survey were removed from the analysis as they were prompted to the end of the survey before those who said they had an interest. This was to ensure all participants were interested in the survey topic and therefore engaged throughout the entirety of the survey. Additionally, the survey was designed to be concise, clear, and engaging to minimize participant fatigue and ensure reliable responses and a high completion rate. Variables were recoded as numeric, ordinal, and nominal when necessary. Variables’ corresponding values were created using numerics alongside descriptive labels to ensure all tests could be run seamlessly.

4.2. Descriptive Statistics

4.2.1. Sample Characterization

Among respondents, 69.2% identified as female, 28.6% identified as male, and one respondent (0.8%) identified as non-binary/third gender. More women than men may have taken the survey due to the distribution tactics of the survey; for example, the conductor of the survey is female and, therefore, may have more female than male contacts. In terms of European respondents, 58.8% of respondents identified as female and 35.3% as male, with one respondent 5.9% not selecting a gender. Female respondents dominate the sample, which may reflect a gender bias in health-conscious product interest.

Regarding age, 45.1% of respondents were aged 18-24, and 19.5% were aged 45-54. This distribution reflects the study’s focus on the enthusiasm of younger generations eager to try and support prebiotic sodas and the middle-aged generation’s open-mindedness to try new products. Among European respondents, the majority were aged 25-34 (47.1%), and the second largest age group was aged 18-24 (35.3%).

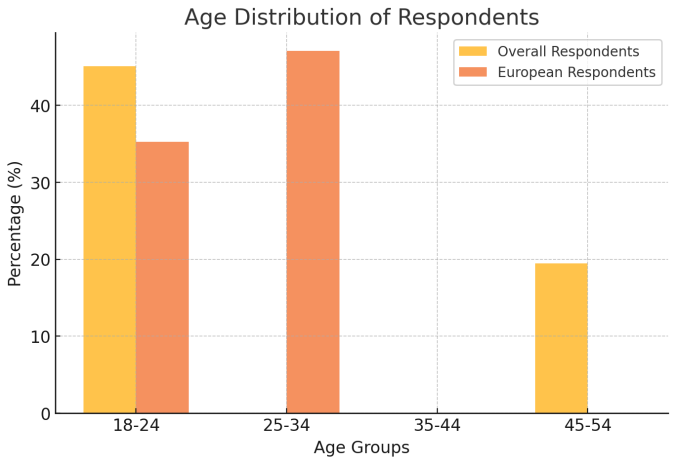

Figure 2. Age Distribution of Respondents

Geographically, 115 (86.5%) respondents were from the United States, 10 (7.5%) from Portugal, and 1 (0.8%) respondent from each of the following countries: Canada, France, Greece, Norway, and Switzerland (Figure 3). This variety in location perspectives, regardless of being small sample sizes, can strengthen the findings by ensuring different perspectives, which is valuable when studying consumer's views regarding a new product segment. However, the European sample is small, so results should be interpreted cautiously when generalizing for the entire European market.

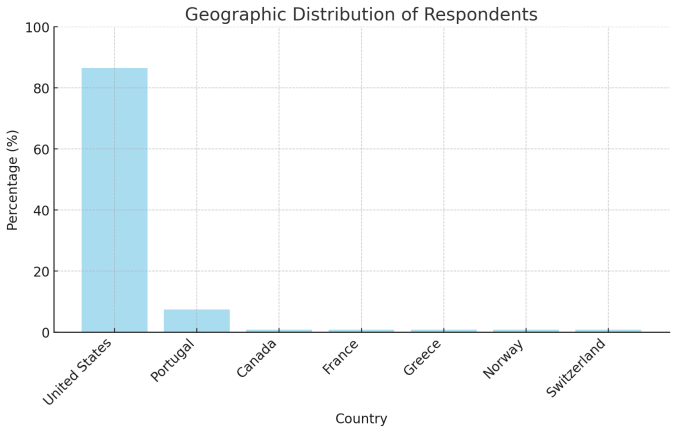

Figure 3. Distribution of Respondents' Countries of Origin

4.2.2. Awareness of Prebiotic Sodas

After the demographic questions, respondents were provided with visuals and a brief overview of what prebiotics are and an example of the leading prebiotic soda brand in the U.S., Poppi. They were then asked screening questions for the conductor to grasp a better understanding of respondents' general knowledge of prebiotic sodas and their interest in trying them. As previously mentioned, any respondents who answered "not at all interested" in trying a health-focused beverage that is an alternative to soda were prompted to the end of the survey, as their input going further would possibly hinder the reliability of the survey results.

Overall, 39.8% of total respondents stated that they are "very interested" in trying a health-focused alternative to soda, 36.1% claimed to be "somewhat interested", and 18% stated that they "could be convinced". Only 7 respondents, 5.3%, said they were "not at all interested", and therefore their survey ended there. When asked if they have "ever purchased or consumed a beverage marketed as having health benefits (e.g., kombucha, kefir, soda, alternatives)", 77.4% stated they have, 20.3% stated they have not, and 1.5% stated that they did not know. Lastly, when asked, "Before reading the introduction, did you know what a prebiotic soda was?", 47.4% stated yes, 16.5% stated they were somewhat knowledgeable, and 35.3% stated they did not know. Among the European sample, only 17.6% had prior awareness, while 58.8% had never heard of them (Figure 4). Awareness is significantly lower in Europe, emphasizing the necessity for educational marketing strategies. However, as stated previously, all data from the small European sample size of only 17 respondents should be taken lightly as the sample is too small to draw completely reliable conclusions.

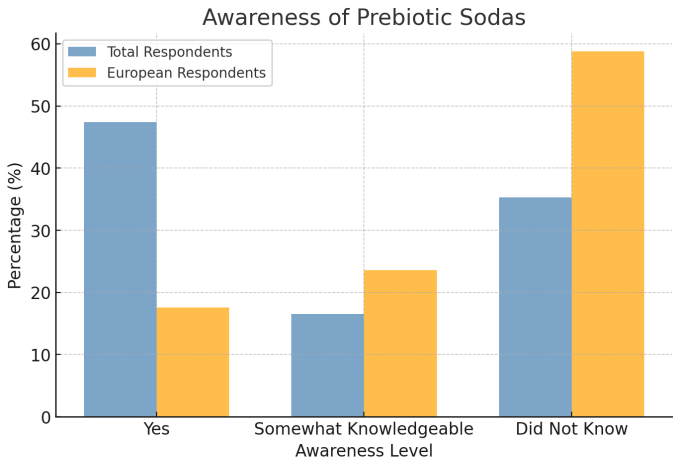

Figure 4. Awareness of Prebiotic Sodas Before Taking the Survey

4.3. Hypothesis Testing

4.3.1. Hypothesis 1: Awareness v.s. Purchase Intent

Hypothesis: Consumers with higher knowledge of prebiotic benefits are more likely to express interest in purchasing prebiotic sodas.

Null Hypothesis (H_0): There is no association between consumers' knowledge of prebiotic benefits and their likelihood to express interest in purchasing prebiotic sodas.

Test Used: Chi-Square Test for association between awareness and purchase intent.

Results: In running a Chi-Square Test to discover if there is an association between awareness and purchase intent, the results found that with $\chi^2(15) = 13.809$ and the p-value of 0.540 is greater than 0.05, the result is **not statistically significant**, meaning we **fail to reject the null hypothesis** that prior knowledge of prebiotic sodas and likelihood to purchase are independent of each other. Because of the small sample size of Europeans, a Fisher-Freement-Halton Exact Test was run among these respondents, and with $p = 0.213$, we also failed to reject the null hypothesis among European respondents. Overall, these findings indicate that knowing what a prebiotic soda is before the survey does not significantly affect the likelihood of purchasing one in regards to all respondents and European respondents. This suggests that increasing awareness alone may not be enough to drive European adoption.

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)
Pearson Chi-Square	13.809[a]	15	.540	.378
Likelihood Ratio	16.760	15	.333	.232
Fisher-Freeman-Halton Exact Test	19.873			.299
N of Valid Cases	126			

a. 18 cells (75.0%) have expected count less than 5. The minimum expected count is .01.

Figure 5. Chi-Square and Fisher Exact Test - All Respondents

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)
Pearson Chi-Square	7.111[a]	6	.311	.377
Likelihood Ratio	9.207	6	.162	.192
Fisher-Freeman-Halton Exact Test	7.615			.213
N of Valid Cases	16			

a. 11 cells (91.7%) have expected count less than 5. The minimum expected count is .06.

Figure 6. Chi-Square and Fisher Exact Test - European Respondents

4.3.2. Hypothesis 2: Price Sensitivity & Purchase Behavior - Restaurants/Cafes

Hypothesis: Consumers' likelihood to purchase prebiotic sodas is significantly affected by their price sensitivity (measured by willingness to pay, WTP) in restaurants or cafe settings.

Null Hypothesis (H_0): Consumers' likelihood to purchase prebiotic sodas is not significantly affected by their price sensitivity (measured by willingness to pay, WTP) in restaurants or cafe settings.

Tests Used: One-way ANOVA for all respondents. Kruskal-Wallis Test for European respondents due to small sample size.

Results: To determine if consumers' willingness to purchase prebiotic sodas is significantly affected by their price sensitivity, a One-Way ANOVA test was run among all respondents, finding the mean likelihood of purchasing a prebiotic soda decreases as the WTP increases. This

suggests that people who are willing to pay lower prices have a slightly higher purchase likelihood than those willing to pay more, but the differences are relatively small.

Descriptives

If available, how likely would you be to purchase a prebiotic soda?

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
€1–€2 ($1–$2)	11	3.73	2.005	.604	2.38	5.07	1	6
€2–€3 ($2–$3)	59	3.24	2.037	.265	2.71	3.77	1	6
€3–€4 ($3–$4)	48	3.04	2.021	.292	2.45	3.63	1	6
More than €4 ($4)	1	3.00	.	.	.	.	3	3
5	7	1.57	1.134	.429	.52	2.62	1	4
Total	126	3.11	2.005	.179	2.76	3.46	1	6

Figure 7. Descriptives of One-Way ANOVA - All Respondents - Restaurant/Cafe

The ANOVA results found F = 1.382 and p = 0.244, indicating that there is **no statistically significant effect** of WTP for a prebiotic soda at a restaurant or cafe on the likelihood to purchase. Since p > 0.05, we **fail to reject the null hypothesis.**

ANOVA

If available, how likely would you be to purchase a prebiotic soda?

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	21.954	4	5.488	1.382	.244
Within Groups	480.491	121	3.971		
Total	502.444	125			

Figure 8. One-Way ANOVA - All Respondents - Restaurant/Cafe

In testing the Effect Size, the Eta-squared = 0.044, meaning only 4.4% of the variance in purchase likelihood is explained by WTP at a restaurant or cafe. Lastly, Levene's homogeneity of variances found that when observing means, the p-value is 0.103, meaning variance might be more stable when looking at the medians instead. Furthermore, variances are unequal, so interpretations should be cautious.

Tests of Homogeneity of Variances

		Levene Statistic	df1	df2	Sig.
If available, how likely would you be to purchase a prebiotic soda?	Based on Mean	14.427	3	121	<.001
	Based on Median	2.102	3	121	.103
	Based on Median and with adjusted df	2.102	3	75.931	.107
	Based on trimmed mean	15.324	3	121	<.001

Figure 9. Tests of Homogeneity of Variances (Levene's Test) - All Respondents - Restaurant/Cafe

ANOVA Effect Sizes[a,b]

		Point Estimate	95% Confidence Interval Lower	Upper
If available, how likely would you be to purchase a prebiotic soda?	Eta-squared	.044	.000	.104
	Epsilon-squared	.012	-.033	.074
	Omega-squared Fixed-effect	.012	-.033	.074
	Omega-squared Random-effect	.003	-.008	.020

a. Eta-squared and Epsilon-squared are estimated based on the fixed-effect model.

b. Negative but less biased estimates are retained, not rounded to zero.

Figure 10. ANOVA Effect Sizes - All Respondents - Restaurant/Cafe

When determining if hypothesis 2 is true to the European sample, a Non-Parametric alternative to ANOVA was used due to the small sample size. The test used was the Kruskal-Wallis Test, which is a non-parametric, rank-based test that does not assume normality. With a p-value of 0.721 greater than the significance level of 0.05, we **fail to reject the null hypothesis,** meaning there is **no statistically significant difference** in European consumers' likelihood to purchase a prebiotic soda across different WTP groups in restaurant/cafe settings.

Independent-Samples Kruskal-Wallis Test Summary

Total N	16
Test Statistic	.655[a]
Degree Of Freedom	2
Asymptotic Sig.(2-sided test)	.721

a. The test statistic is adjusted for ties.

Figure 11. Kruskal-Wallis Test Summary - European Respondents - Restaurant/Cafe

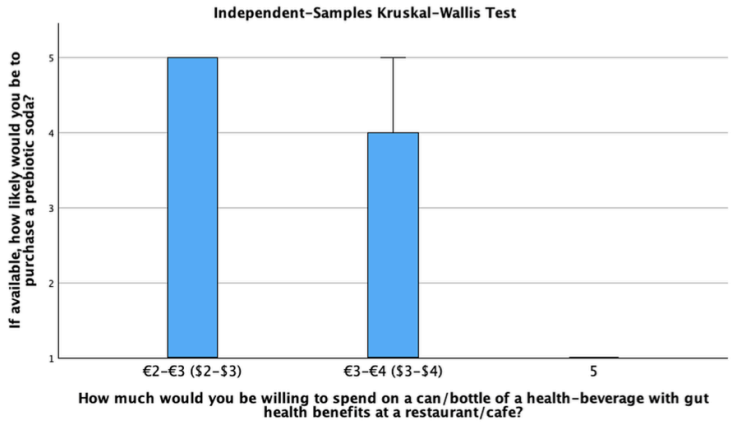

Figure 12. Kruskal-Wallis Distribution of WTP - European Respondents - Restaurant/Cafe

Overall, **price sensitivity does not significantly impact purchase intent for prebiotic sodas in North America or Europe.** This suggests that European and North American consumers prioritize other factors over price when considering functional beverages.

4.3.3. Hypothesis 3: Price Sensitivity & Purchase Behavior - Grocery Store

Hypothesis: Consumers' likelihood to purchase prebiotic sodas is significantly affected by their price sensitivity (measured by willingness to pay, WTP) in grocery stores.

Null Hypothesis (H_0): Consumers' likelihood to purchase prebiotic sodas is not significantly affected by their price sensitivity (measured by willingness to pay, WTP) in grocery stores.

Tests Used: One-way ANOVA for all respondents, Multiple Regression Analysis, and Kruskal-Wallis Test for European respondents due to small sample size.

Results: To determine if consumers' willingness to purchase prebiotic sodas is significantly affected by their price sensitivity in grocery stores, a One-Way ANOVA test conducted on all respondents found that the mean likelihood of purchasing a soda varies across different price groups and that the standard deviations are relatively large, indicating high variability in responses.

Descriptives

If available, how likely would you be to purchase a prebiotic soda?

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
€1–€2 ($1–$2)	39	2.87	2.028	.325	2.21	3.53	1	6
€2–€3 ($2–$3)	54	3.35	2.039	.277	2.80	3.91	1	6
€3–€4 ($3–$4)	22	3.05	1.963	.419	2.17	3.92	1	6
More than €4 ($4)	3	2.33	2.309	1.333	-3.40	8.07	1	5
5	1	3.00	.	.	.	.	3	3
Total	119	3.11	2.008	.184	2.74	3.47	1	6

Figure 13. ANOVA Descriptives - All Respondents - Grocery Store

Levene's test found a p-value of 0.736 (based on the mean) and 0.969 (based on the median), meaning the test fails to reject the null hypothesis of homogeneity, meaning we can proceed with the standard One-Way ANOVA results.

Tests of Homogeneity of Variances

		Levene Statistic	df1	df2	Sig.
If available, how likely would you be to purchase a prebiotic soda?	Based on Mean	.424	3	114	.736
	Based on Median	.083	3	114	.969
	Based on Median and with adjusted df	.083	3	107.029	.969
	Based on trimmed mean	.464	3	114	.708

Figure 14. Tests of Homogeneity of Variances - All Respondents - Grocery Store

The ANOVA results found a p-value of 0.777 and F = 0.443, meaning there is **no statistically significant relationship** between customers' willingness to purchase prebiotic sodas and their willingness to pay at a grocery store. This implies that either the price variation within the tested range of $1-$4 (€1–€4) is not a major barrier to purchase or that price may not be a key factor in purchase intent.

ANOVA

If available, how likely would you be to purchase a prebiotic soda?

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	7.285	4	1.821	.443	.777
Within Groups	468.295	114	4.108		
Total	475.580	118			

Figure 15. ANOVA - All Respondents - Grocery Store

Knowing that price may not be a key factor affecting consumers' likelihood to purchase prebiotic sodas, running a Multiple Regression test will compare the likelihood to purchase with the importance of certain factors when purchasing any beverage type.

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.	95.0% Confidence Interval for B Lower Bound	95.0% Confidence Interval for B Upper Bound	Collinearity Statistics Tolerance	Collinearity Statistics VIF
1	(Constant)	4.270	1.071		3.987	<.001	2.149	6.392		
	How important are the following when you are choosing any beverage? – Sugar Content	.049	.106	.054	.459	.647	-.161	.258	.596	1.679
	How important are the following when you are choosing any beverage? – Calories	.045	.115	.046	.396	.692	-.182	.273	.598	1.673
	How important are the following when you are choosing any beverage? – Ingredients	-.129	.112	-.129	-1.158	.249	-.350	.092	.649	1.540
	How important are the following when you are choosing any beverage? – Packaging	.119	.173	.087	.692	.490	-.222	.461	.517	1.933
	How important are the following when you are choosing any beverage? – Price	-.096	.109	-.092	-.876	.383	-.311	.120	.729	1.371
	How important are the following when you are choosing any beverage? – Brand	-.062	.172	-.045	-.360	.719	-.403	.279	.519	1.928
	How important are the following when you are choosing any beverage? – Fiber Content	-.232	.173	-.155	-1.341	.182	-.574	.110	.608	1.646
	How important are the following when you are choosing any beverage? – Health Benefits	.075	.113	.061	.666	.507	-.149	.299	.956	1.046
	How important are the following when you are choosing any beverage? – Taste	-.037	.097	-.036	-.379	.705	-.230	.156	.889	1.125

a. Dependent Variable: If available, how likely would you be to purchase a prebiotic soda?

Figure 16. Coefficients - All Respondents - Grocery Store

An R-value of 0.244 indicates a weak correlation between the independent variables (importance factors) and the dependent variable (likelihood to purchase), and $R^2 = 0.060$, meaning only 6% of the variance in consumers' likelihood to purchase a prebiotic soda is explained by the independent variables. The adjusted $R^2 = -0.013$ is negative, suggesting the model does not generalize well and may not be a good fit. Lastly, the significance value of 0.600 means that collectively, the predictors do **not significantly explain** variations in the likelihood to purchase, meaning factors not included in this model, such as brand reputation, lifestyle, or health-consciousness, may better explain purchase behavior.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics: R Square Change	Change Statistics: F Change	Change Statistics: df1	Change Statistics: df2	Change Statistics: Sig. F Change
1	.244[a]	.060	-.013	2.018	.060	.819	9	116	.600

a. Predictors: (Constant), How important are the following when you are choosing any beverage? – Taste, How important are the following when you are choosing any beverage? – Fiber Content, How important are the following when you are choosing any beverage? – Health Benefits, How important are the following when you are choosing any beverage? – Calories, How important are the following when you are choosing any beverage? – Price, How important are the following when you are choosing any beverage? – Ingredients, How important are the following when you are choosing any beverage? – Brand, How important are the following when you are choosing any beverage? – Sugar Content, How important are the following when you are choosing any beverage? – Packaging

Figure 17. Model Summary - All Respondents - Grocery Store

Lastly, a Kruskal-Wallis test was run among the small sample size of Europeans and found that willingness to pay does **not significantly** affect their likelihood to purchase a prebiotic soda at the grocery store. The sample size is quite small, which may contribute to the lack of significant results in this case.

4.3.4. Taste v.s. Health Importance

Hypothesis: Consumers place more importance on taste and ingredients than on health claims when choosing a beverage.

Null Hypothesis (H_0): Consumers do not place more importance on taste and ingredients than on health claims when choosing a beverage.

Tests Used: Independent Sample T-Test for comparing mean importance scores for taste vs. health benefits. Wilcoxon Signed-Rank Test for non-parametric comparison in the small European sample.

An Independent Sample T-Test was run for all respondents and the goal was to compare whether North American and European respondents differ in how they prioritize taste and health benefits when choosing a beverage. With a p-value of 0.310 for taste, there is **no significant difference** in the importance of taste between North Americans and Europeans. In regards to health benefits, p = 0.351, indicating **no significant difference** in the importance of health benefits between North Americans and Europeans when choosing a beverage.

Group Statistics

	Region (North America vs Europe)	N	Mean	Std. Deviation	Std. Error Mean
How important are the following when you are choosing any beverage? – Taste	North America	115	3.68	2.016	.188
	Europe	15	3.13	1.885	.487
How important are the following when you are choosing any beverage? – Health Benefits	North America	115	5.90	1.917	.179
	Europe	15	5.40	2.028	.524

Figure 18. Group Statistics - All Respondents

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means							
						Significance		Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
		F	Sig.	t	df	One-Sided p	Two-Sided p			Lower	Upper
How important are the following when you are choosing any beverage? - Taste	Equal variances assumed	6.428	.012	.992	128	.162	.323	.545	.549	-.542	1.632
	Equal variances not assumed			1.045	18.437	.155	.310	.545	.522	-.549	1.639
How important are the following when you are choosing any beverage? - Health Benefits	Equal variances assumed	.042	.838	.936	128	.176	.351	.496	.530	-.552	1.544
	Equal variances not assumed			.896	17.421	.191	.383	.496	.553	-.670	1.661

Figure 19. Independent Sample T-Test - All Respondents

When running a Wilcoxon Signed Rank test among the small European sample to determine if there is a significant difference in the median importance scores between health benefits and taste when choosing a beverage, $p = 0.011$ indicating that there **is a significant difference** between the importance of health benefits and taste for European respondents. We **reject the null hypothesis,** and the negative Z-score (-2.532) suggests that health benefits tend to be rated higher than taste in importance. This implies that Europeans are more likely to prioritize health benefits over taste when selecting a beverage. When running the test on North American respondents, results also showed that the difference between health benefits and taste is statistically significant and that health benefits are considered more important than taste for most North American respondents, as 90 of 118 respondents rated health benefits higher than taste.

4.4. Additional Insights

4.4.1. Most Valued Soda Attributes: What do consumers care about most in soda?

The most important attributes that consumers look for in soda are ingredients, brand, fiber content, and health benefits, with the least important attributes being taste and price. When it comes to calorie and sugar content, the high standard deviations indicate that some consumers care a lot while others don't. Fiber content had the lowest variability, meaning consumers are more consistent in valuing it. Overall, health-conscious consumers prioritize ingredients, fiber content, and health benefits, therefore, Poppi's marketing team may want to consider emphasizing functional health claims and clean ingredients.

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
How important are the following when you are choosing a soda? – Health Benefits	135	1	7	4.27	1.941
How important are the following when you are choosing a soda? – Fiber Content	135	1	7	4.30	1.671
How important are the following when you are choosing a soda? – Sugar Content	135	1	7	4.07	2.297
How important are the following when you are choosing a soda? – Calories	135	1	7	4.24	2.299
How important are the following when you are choosing a soda? – Ingredients	135	1	7	4.40	2.067
How important are the following when you are choosing a soda? – Packaging	135	1	7	4.26	1.820
How important are the following when you are choosing a soda? – Price	135	1	7	4.01	2.055
How important are the following when you are choosing a soda? – Brand	135	1	7	4.32	1.991
How important are the following when you are choosing a soda? – Taste	135	1	6	3.34	2.085
Valid N (listwise)	135				

Figure 20. Descriptives Statistics - All Respondents

After completing a Spearman's rank correlation coefficients between purchase intent and importance factors, the findings indicate that there are **no significant correlations** between purchase intent and the importance factors mentioned above, suggesting respondents' purchase intent is not strongly influenced by any single soda attribute and that other factors, such as branding and personal experience play a larger role. However, there are strong correlations between soda attributes. Consumers who find health benefits important also care about calories, those who value ingredients also pay attention to packaging, those who care about brand also care about taste, and those who find health benefits important value fiber content.

When observing the concerns of consumers when choosing regular soda versus prebiotic soda, respondents ranked taste (68.1%), price (51.9%), and preference for other drinks (25.9%) as reasons they would choose one type of soda over the other. Out of the European respondents, 82.4% ranked health as being an important factor in their decision, along with the price (58.8%). Among North Americans, sugar content, price, and taste were leading concerns. Among both regions, about 17% stated that unfamiliarity with prebiotics could influence their decision, implying that not only should price and taste be addressed in Poppi's marketing strategy but so should brief info regarding prebiotics.

4.4.2. Trust in Health Claims

In regards to consumers' trust in health claims, Europeans trust "low sugar" (58.8% of respondents) and "no artificial flavoring" (52.9%) the most. In comparison to North American respondents, Europeans have more trust in these two health claims, although they have less trust in "probiotic/gut health" at 23.5% compared to North Americans' 32.2%.

4.4.3. Soda Consumption Habits

Regarding where respondents consume the most, 94.1% of European respondents stated they consume the most soda in a bar or restaurant setting, whereas only 67% of North Americans said the same. However, North Americans are more likely to consume soda at home compared to Europeans, with 33.9% of North Americans stating they drink soda at home, and only 29.4% of Europeans saying the same. Overall, for Europe, Poppi should focus on distribution in restaurants, cafes, and bars, whereas in North America, Poppi should continue targeting home consumption through retail. grocery channels, which is what the brand currently does in the U.S.

4.4.4. Consumer Receptivity to New Beverages

When asked how receptive respondents think people in their country are to new beverages, 41.2% of Europeans stated they believe people in their country to be very receptive of trying new drinks, 58.8% as somewhat receptive, and 0% stating not receptive. Among North Americans, 31.3% state their country is very receptive, 58.3% somewhat receptive, and only 5.2% not receptive. This indicates that in both regions, Poppi has the potential to build its brand credibility with the support of those open to trying prebiotic soda.

V. Discussion & Limitations

This study assessed consumer perceptions, purchase intent, and barriers to the adoption of prebiotic sodas, particularly in the European market. While awareness of prebiotic sodas is significantly lower in Europe than in North America, interest in trying new beverages is high, indicating an opportunity for strategic market entry. However, consumer preferences, cultural

differences, regulatory restrictions, and branding considerations will play a crucial role in determining Poppi's success.

Awareness & Purchase Intent: Knowledge Alone Is Not Enough

No significant relationship between prior knowledge of prebiotic sodas and the likelihood to purchase was found in either North America or Europe, despite existing data stating that people with less knowledge about functional foods increased their likelihood of buying functional foods after they received information about their health benefits (Baker et al., 2022, 14). This suggests that simply increasing awareness of prebiotic sodas may not directly translate to higher purchase intent and that other factors, such as branding, might be more influential in driving consumer adoption of prebiotic sodas. This supports Poppi's need for marketing strategies that go beyond educating European consumers on prebiotics. Although literature found Europeans were unwilling to compromise on taste for the health benefits of a functional food (Baker et al., 2022, 27), our findings stated otherwise. However, because Poppi would be new to the European market, they may consider focusing on the similar taste it has to existing sodas and creating a compelling brand story to drive adoption and sales. However, because the literature states that European consumers are more skeptical of new health trends, Poppi must not completely disregard education. Instead of using health claims that are not even allowed in the EU, they could focus on the health benefits of the new beverage and create a brand image and product experience that represents the feel-good, youthful, and colorful soda alternative it is.

According to Hofstede's cultural dimensions, European customers, particularly in countries with high uncertainty avoidance, such as Portugal (99) and Greece (100), may tend to be more cautious with new health trends. This aligns with lower trust in probiotic/gut health claims and implies a need for credible scientific backing or regulatory approvals if Poppi would truly like to market itself as a prebiotic soda in the EU. Hofstede's theory further explains how understanding which countries have a higher long-term orientation, and therefore may be more long-term health-focused, can be crucial to Poppi's marketing strategy. For countries such as the Netherlands (67) and Finland (63), emphasizing sustained health benefits of prebiotics rather than immediate effects could lead to more adoption.

Price Sensitivity & Purchase Behavior: Price is Not the Barrier

Because there is no significant impact of price sensitivity on purchase intent, either in grocery stores or restaurant or cafe settings, Poppi does not need to compete on price, instead, it can focus more on premium positioning, branding, and messaging. Although discounts and free tastings at the beginning might be beneficial to getting Poppi "off the ground and running" in Europe.

Countries with a higher power distance, such as France (68) and Spain (57), may associate premium pricing with higher quality, according to Hofstede. Whereas more indulgent cultures, such as the U.S., are used to more impulse purchases. Knowing this, competitive pricing and effective brand storytelling provide Europeans with more rationale for their purchase decision.

Taste vs Health Priorities: Europeans Trust Clean Labeling Over Health Trends

Based on the survey results, Europeans prioritize health benefits over taste, but North Americans place equal importance on both. Therefore, Poppi's European marketing should emphasize the natural ingredients the soda contains and how it has no artificial flavoring rather than the can simply stating "gut healthy", a health claim less trusted by them. Again, this also prompts Poppi to lean into their visual creative branding, experience marketing, and storytelling rather than direct health claims.

Regulatory Challenges and EU Restrictions on Health Claims

In regards to regulatory challenges Poppi will face in the European market, Poppi may not be able to market itself as a "prebiotic soda". Instead, Poppi can use already approved terms that still emphasize Poppi being a healthier alternative to classic soda, such as "source of fiber" and "low sugar", both of which are approved in the EU Register of Nutrition and Health Claims. Failure to adhere to these regulations could hinder Poppi's market entry or lead to legal challenges. One way to combat this is to focus on the product labels and brand story and image. Aside from making it clear through labeling and visuals that Poppi is a healthier alternative to soda, they can also collaborate with local influences focused on lifestyle and wellness.

Market Entry Strategy: Where & How Poppi Should Expand

Based on survey results, Europeans drink soda more frequently in restaurant and bar settings (94.1%), compared to North Americans who consume it more at home (33.9%). This implies that Poppi should focus on distribution not as the brand already does in the U.S., at grocery stores, but rather in restaurants, cafes, and bars. We can also take a closer look at which age demographics are likely to consume functional foods. In our literature and findings, we saw that 19 to 30-year-olds are the most likely age group to consume these functional foods (Baker et al., 2022, 28). By these two findings of where soda is consumed and by whom, we are able to see that implementing Poppi at restaurants, cafes, and bars would be extremely beneficial to the overall marketing strategy. The offering of Poppi at restaurants allows the price of $2.50 to be priced comparatively to its counterparts. Although rather pricey compared to classic sodas at the grocery store, this price is competitive in the restaurant/cafe and bar scene in both the U.S. and Europe. Competitively pricing Poppi in these settings in Europe, along with partnering with local influencers who swap either classic soda or alcohol for a Poppi when out, can make trying the drink more attractive to new customers as well as create meaningful brand exposure. Marketing Poppi as an experience with friends and a "feel-good" alternative to alcohol, especially with sober curious movements rising, can set Poppi apart from competitors. This is a particularly strong strategy due to the younger generations being the most interested in trying prebiotic sodas. Poppi can succeed in this sector by referring to Hofstede's cultural framework alongside the findings in this report. Those things considered, what works in one country may not work in another, therefore, localized marketing strategies are necessary.

Limitations

The first limitation of the study's findings is that the European sample size was smaller than expected, limiting the ability to generalize findings. A larger sample size similar to that of the American respondents would be preferable to draw reliable conclusions, although, for the case of this study, the European and North American respondents had very similar answers to the survey. The second limitation is the potential response bias. Because the survey consisted of self-reported data, the data may contain social desirability bias even though respondents were told their responses were anonymous and only used for the purpose of this study.

VI. Conclusion

Overall, Poppi has a strong opportunity to introduce its brand in Europe if positioned correctly. Their brand image, storytelling, and visual and experiential marketing strategy are crucial to build consumers' trust in the new beverage. By combining Hofstede's cultural framework, regulatory compliance, and consumer preferences, Poppi can create a tailored European expansion strategy that goes beyond building awareness and drives real adoption and excitement around the brand. Europe is an untapped but promising market in the prebiotic soda industry. Entering this market requires careful regulatory navigation and strong branding when it comes to labeling, partnerships, and marketing strategies. As the study found, Poppi's biggest challenge is not price or taste, but trust - consumers need a reason to believe in a product.

Future research should focus on gathering a larger European sample size to gain more reliable insights, as well as dive deeper into country-specific preferences, as consumer behavior differs significantly between countries. It may also consider taste-testing experiments, where in-market trials are conducted to understand real-world consumer reactions to prebiotic sodas. Lastly, they may also conduct a longitudinal study, tracking consumer perceptions over time as prebiotic sodas gain more awareness in the U.S. and across Europe.

Overall, with the right team and strategy, Poppi has the chance to make a name for itself, just as they have already done in the U.S. over the past five years. With clear, engaging, and experiential marketing, alongside addressing cultural preferences and differences, Poppi has the potential to thrive in Europe's untapped but promising prebiotic soda Market.

VII. Appendix

Appendix 1. Survey

Dear participant,

I invite you to participate in my survey, which is focused on unraveling your perceptions and preferences as a consumer to aid in my Masters Thesis at the University of Catolica-Lisbon.

The survey will take you about **4-6 min to complete**. All responses are anonymous and will be handled with utmost confidentiality and used solely for academic purposes.

Upon completion, you will have the **chance to win a $20 (or €20) Amazon gift certificate**.

Your insights are invaluable to my research, and I appreciate your participation!

Please Read

In this survey, you will be asked about different types of sodas and health beverages, including a new category called prebiotic sodas.

Are prebiotics different from probiotics?
Yes! Prebiotics are fibers that feed the good bacteria already living in your gut, whereas probiotics are the live bacteria that add to the population of good bacteria in your gut. Overall, prebiotics act as food for probiotics and help them thrive.

What are prebiotic sodas?
Prebiotic sodas are carbonated beverages that contain plant fibers and other ingredients believed to support gut health. Unlike regular sodas, these beverages are typically lower in sugar and marketed as a healthier alternative.

Below, you will find 2 pictures of a prebiotic soda brand currently available in the U.S.
*These visuals serve as an example of a prebiotic soda and are not an endorsement.

What is your email address?

(This question is only if you would like to participate in the chance to win a $20 (or €20) Amazon gift certificate)

In which country do you currently live in?

Select one

What best describes your gender?

- Male
- Female
- Non-binary / third gender
- Prefer not to say

How old are you?

- ◯ Under 18
- ◯ 18-24 years old
- ◯ 25-34 years old
- ◯ 35-44 years old
- ◯ 45-54 years old
- ◯ 55-64 years old
- ◯ 65+ years old

Before reading the introduction, did you know what a prebiotic soda was?

- ◯ Yes
- ◯ No
- ◯ Somewhat

Have you ever *purchased or consumed* a beverage marketed as having health benefits (e.g., kombucha, kefir, soda alternatives)?

- ◯ Yes
- ◯ No
- ◯ I do not know

How interested are you in trying health-focused beverages that are an alternative to soda?

- ◯ Very Interested
- ◯ Somewhat Interested
- ◯ I could be convinced
- ◯ Not at all Interested

How often do you consume *soda* (including diet, zero-sugar, and zero-calorie sodas)?

- ◯ Daily
- ◯ 2-3 times a week
- ◯ Few times a Month
- ◯ Rarely
- ◯ Never

How familiar are you with beverages that promote gut health, such as kombucha, prebiotic sodas, or kefir?

- ◯ Very familiar
- ◯ Somewhat familiar
- ◯ Not at all familiar

Have you heard of prebiotic soda brands, such as Olipop or Poppi, which are positioned as healthy alternatives to regular soda?

- ◯ Yes
- ◯ No
- ◯ I am not sure

How did you first hear about *prebiotic sodas*?

- [ ] Social Media
- [ ] Word of Mouth
- [ ] In-Store
- [ ] Online Ads
- [ ] Other
- [ ] I have never heard of a prebiotic soda

Have you ever tried a *prebiotic soda*?

- ◯ Yes
- ◯ No
- ◯ I am not sure

How important are the following when you are choosing *any beverage*?

	Not at all important	Slightly important	Moderately important	Very important	Extremely important
Health Benefits	◯	◯	◯	◯	◯
Fiber Content	◯	◯	◯	◯	◯
Sugar Content	◯	◯	◯	◯	◯
Calories	◯	◯	◯	◯	◯
Ingredients	◯	◯	◯	◯	◯
Packaging	◯	◯	◯	◯	◯
Price	◯	◯	◯	◯	◯
Brand	◯	◯	◯	◯	◯
Taste	◯	◯	◯	◯	◯

How important are the following when you are choosing a *soda*?

	Not at all important	Slightly important	Moderately important	Very important	Extremely important
Health Benefits	○	○	○	○	○
Fiber Content	○	○	○	○	○
Sugar Content	○	○	○	○	○
Calories	○	○	○	○	○
Ingredients	○	○	○	○	○
Packaging	○	○	○	○	○
Price	○	○	○	○	○
Brand	○	○	○	○	○
Taste	○	○	○	○	○

If you had to choose between a regular soda and an alternative health-focused soda, which factors matter *most* to you? *Check all that apply.*

- ☐ Price
- ☐ Taste
- ☐ Health Benefits
- ☐ Brand
- ☐ Ingredients
- ☐ Sugar Content
- ☐ Calories
- ☐ Other

How often do you *purchase* each of the following?

	Daily	2-3 times a week	4-6 times a week	Once a week	Monthly	Rarely	Never
Regular Soda	○	○	○	○	○	○	○
Diet Soda	○	○	○	○	○	○	○
Health-Focused Beverages (E.g. Kombucha, Kefir, Aloe drinks, Vitamin water, Pre-biotic soda)	○	○	○	○	○	○	○

If a prebiotic soda tasted *similar* to your preferred soda, would you consider switching to it?

- ○ Yes
- ○ No
- ○ It depends

How much would you be willing to spend on a *can/bottle* of a *health-beverage* with gut health benefits **at a restaurant/cafe?**

- ○ Less than €1 ($1)
- ○ €1-€2 ($1-$2)
- ○ €2-€3 ($2-$3)
- ○ €3-€4 ($3-$4)
- ○ More than €4 ($4)

How much would you be willing to spend on a *can/bottle* of a *health-beverage* with gut health benefits **at the grocery store/super market?**

- ◯ Less than €1 ($1)
- ◯ €1-€2 ($1-$2)
- ◯ €2-€3 ($2-$3)
- ◯ €3-€4 ($3-$4)
- ◯ More than €4 ($4)

If available, how likely would you be to purchase a *prebiotic soda*?

- ◯ Extremely likely
- ◯ Somewhat likely
- ◯ Neither likely nor unlikely
- ◯ Somewhat unlikely
- ◯ Extremely unlikely

Which of the following concerns may affect your choice between regular soda and a prebiotic soda? *Check all that apply.*

- [ ] Price
- [ ] Taste
- [ ] Unfamiliarity with prebiotics
- [ ] Dislike of health claims
- [ ] Preference for other drinks
- [ ] Other

What health claims do you *trust most* in food/beverage marketing? *Check all that apply.*

- [ ] Probiotic/gut health
- [ ] Energy-boosting
- [ ] Low Sugar
- [ ] Natural ingredients
- [ ] No preservatives
- [ ] No GMOs
- [ ] No artificial flavoring
- [ ] I don't trust health claims
- [ ] Other

Do you believe gut health is an important aspect of overall health?

- ◯ Yes
- ◯ No
- ◯ Somewhat
- ◯ Not Sure

Are you aware of government or regulatory restrictions on health claims for food/beverages in your country?

- ◯ Yes
- ◯ No
- ◯ Somewhat

How receptive do you think people in *your* country are to try new types of drinks?

- ◯ Very Receptive
- ◯ Somewhat Receptive
- ◯ Not Receptive
- ◯ Not sure

Where do you usually consume *soda*? *Check all that apply.*

- [ ] Work
- [ ] Home
- [ ] Bar/Restaurant
- [ ] Family/Friends House
- [ ] Park
- [ ] On Vacation/Trips
- [ ] On Special Occasions
- [ ] Car
- [ ] Walking
- [ ] Other

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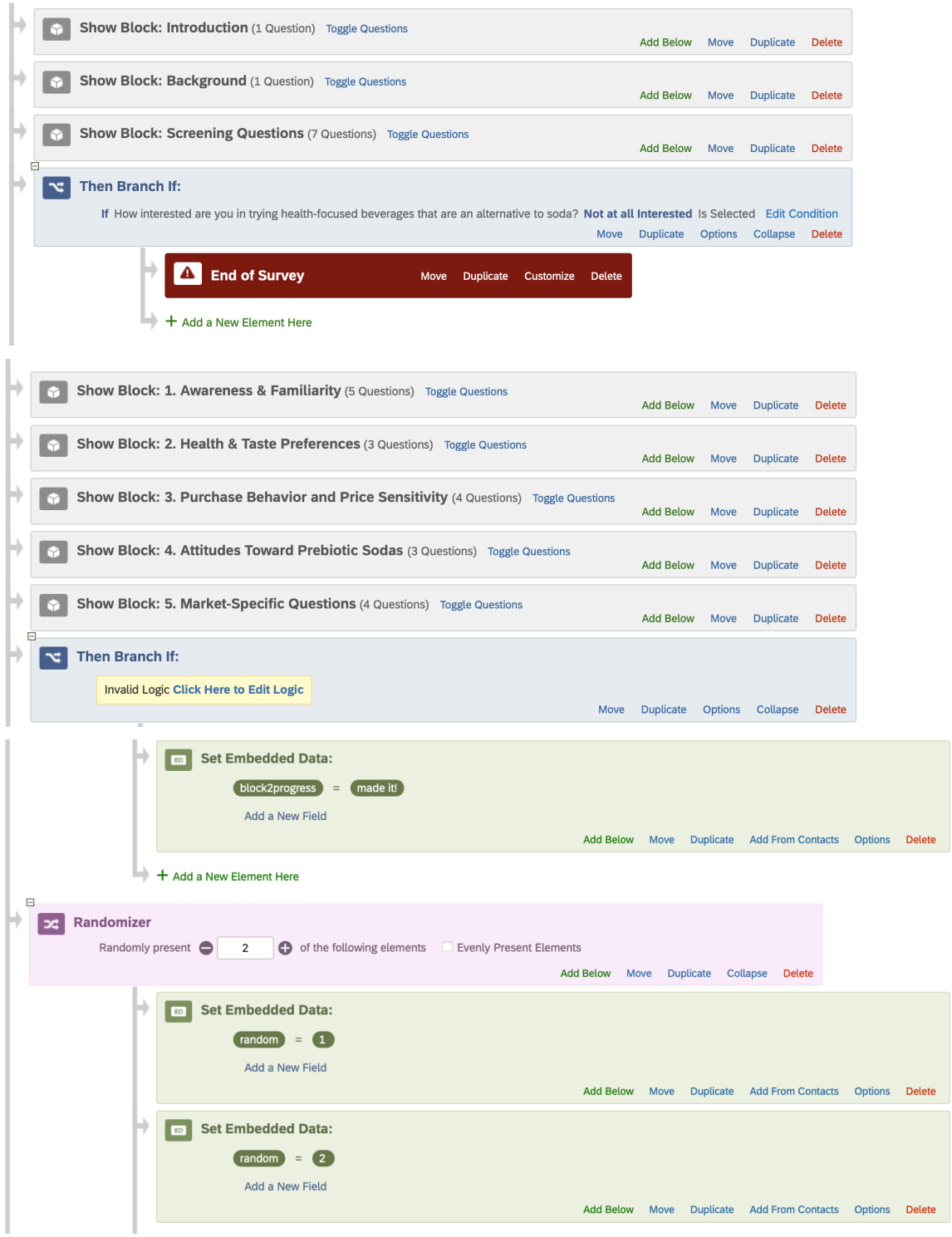
We thank you for your time spent taking this survey.
Your response has been recorded.

Appendix 2. Survey Flow



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