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Slovenian Consumers' Perceptions and Use of CBD Through the Lens of Motivation, Opportunity, and Ability Theory

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1   INTRODUCTION

In recent years, the way the public views cannabis and products derived from it has changed considerably. Although consumer choices regarding health-oriented foods have been studied in various disciplines (e.g., nutritional science, psychology, economics, consumer behaviour) (e.g., Escobar-Farfánet al., 2025; Weissgerber et al., 2025), little is known about the actual public perception and consumption of foods containing cannabidiol (CBD). CBD has quickly become a mainstream ingredient in various product categories: from wellness supplements and food/ beverages to cosmetics and even pharmaceuticals. One survey found that 24% of respondents from different age groups in selected European countries had used a CBD product in the past year, with a further 11% having used them before (Statista, 2022). Similarly, a study using data from the USA in 2022 showed that 26% of Americans use CBD (Cross River Therapy, 2025).

Such growth driven by a favourable shift in regulatory policies and the introduction of innovative new products (Global Market Insight, 2024) makes it crucial to understand consumers' perceptions, attitudes, and consumption patterns when it comes to CBD, given that consumer beliefs about the benefits, risks, accessibility, and knowledge of CBD will influence how this market develops.

The literature points out that while people make hundreds of dietary decisions every day, they are not as automatic or simple as they may seem (Cohen and Babey, 2012). Consumers' health-promoting food choices are based on a complex mix of factors that include personal characteristics (e.g., socio-demographic characteristics), individual and societal values, available resources, social environment, lifestyle, and context of consumption (Chen and Antonelli, 2020; Wongprawmas et al., 2021).

A commonly used theoretical framework for analysing consumer decisions is the Motivation, Opportunity, and Ability (MOA) model by MacInnis and Jaworski (1989). This framework was later operationalised in the context of environmental consumer behaviour, deepening its behavioural application and contextual relevance (Ölander and Thøgersen, 1995). The complexity of the CBD market, characterised by regulatory uncertainty, different product formats, various health claims, and evolving social acceptance, makes it particularly suitable for analysis based on the MOA framework. In terms of dietary decision-making, this framework suggests that consumers must:

a) be motivated to make (health-conscious) dietary choices;

b) be able to process the information needed to make healthy food or supplement choices; and

c) have access to such foods or food supplements and be able to prepare them.

Drawing from Motivation, Opportunity and Ability framework (MacInnis and Jaworski, 1989), these theoretical lenses are applied to examine the mechanisms of CBD-related behaviours and the associated perceptions held by Slovenian consumers. Therefore, we investigate how consumers' motivations (i.e., perceived benefits, perceived risks), opportunities (i.e., availability, social norms) and abilities (subjective knowledge and prior experience) influence their perceptions and behaviour concerning CBD.

This study contributes to the existing literature in several ways. First, we examine a variety of factors that affect consumers' views on CBD and their behaviours (intentions), providing a more comprehensive understanding of the increase in CBD consumption (Choi et al., 2024). Second, previous studies applied the MOA framework in various areas of focus, such as organic food consumption (Zhu, 2016) and food waste (Soma et al., 2021). However, to our knowledge, no study has applied the MOA model to CBD consumption. Third, most studies on CBD have focused on regions outside Europe (e.g., consumer perceptions in the USA and Canada; Choi and Hwang, 2023) or are limited in terms of the population groups studied (e.g., only young adults; Wysota et al., 2022a, 2022b), whereas our study provides comprehensive insights into the nuances of CBD use among adult Slovenians.

2 LITERATURE OVERVIEW OF CONSUMERS' PERCEPTIONS OF CBD PRODUCTS

This review summarises recent literature on consumer perceptions of CBD products, as structured using the Motivations-Opportunities-Abilities (MOA) framework (MacInnis and Jaworski, 1989). The MOA framework suggests that consumer behaviour is driven by three main factors: (1) Motivations as drivers or reasons behind consumer intentions and use; (2) Opportunities as external factors that enable or encourage usage; and (3) Abilities as individual capabilities, knowledge and resources that influence behaviour (Choi and Hwang, 2023). Using the MOA framework to shape the approach we adopt, we review what current studies say about why consumers use CBD, how they perceive it, their intentions to use it, and their actual consumption patterns around the world. The analysis spans all major CBD product types (oils, edibles, topicals etc.) and demographic groups, highlighting common themes and contrasting findings among studies.

2.1 MOTIVATIONS SHAPING THE PERCEPTION AND USE OF CBD

Within the MOA framework, motivation refers to the internal psychological drivers that stimulate the interest and desire of a consumer to engage with CBD products. Current research reveals the existence of a complex set of motivations characterised by both utilitarian health behaviours and broader wellness aspirations.

2.1.1 Health and wellness motivations

The motivation of consumers to consume CBD lies primarily in the perceived benefits for their health and well-being. In studies and surveys, therapeutic and self-care reasons dominate, whereas purely recreational motivations are less common (Goodman et al., 2022; GlobalWebIndex, 2020; Consumer Reports, 2019).

Pain management

Pain relief is consistently the reason most commonly given for using CBD. In a 2019 UK survey, the majority of CBD users stated their main reason for using CBD was to relieve pain (Food Standards Agency, 2019). Similarly, a Gallup poll in the USA showed that pain relief was the primary motivation of American CBD users (Brenan, 2019). Many consumers view CBD as a natural pain reliever for conditions like chronic pain, arthritis or migraine, and often hope to avoid traditional pain medications (Food Standards Agency, 2019; Goodman et al., 2022). Among older adults who use CBD, 40% say they do so for pain problems – by far the highest percentage for any symptom in this group (Consumer Reports, 2019). One study established that 62% of users reported having used CBD to alleviate specific health issues; pain management, anxiety and depression were most often mentioned (Corroon and Phillips, 2018).

Anxiety and stress reduction

Another primary driver is the use of CBD for mental health and stress relief. Surveys show that a large share of users take CBD to cope with anxiety, everyday stress, or depression (Wysota et al., 2022a, 2022b; Food Standards Agency, 2019). Global consumer studies have found that stress relief is a key motivator for those considering CBD products (GlobalWebIndex, 2020). In several studies, anxiety ranked as the third-most important reason for using CBD, often just behind pain. For example, a US survey of young adults established that respondents largely perceived CBD as being effective for relieving anxiety and described this as an important motive for using it (Wysota et al., 2022a, 2022b). CBD users often describe a calming or anxiolytic effect that helps with conditions ranging from generalised anxiety to social stress (Food Standards Agency, 2019). In a UK survey, 42.6% of users stated reducing anxiety as the main reason for using CBD, followed by for improving sleep (42.5%; including assisting with insomnia and restless sleep), reducing stress (37%) and increasing general wellbeing (37%) (321CBD, n.d.).

To improve sleep

Many consumers are motivated to use CBD to combat insomnia or improve the quality of their sleep. Insomnia is often cited as a reason for taking CBD, with users hoping that the relaxing properties of CBD will make it easier to fall (or stay) asleep. In a 2019 Gallup poll, insomnia was among the top three reasons Americans use CBD (after pain and anxiety) (Brenan, 2019). Similarly, in some surveys about half of CBD users say they use it to help them sleep or relax at night (Choi and Hwang, 2023).

General wellness and preventive health

Apart from treating specific ailments, many people use CBD as a general wellness remedy. Around two-thirds of CBD users in a UK study reported that CBD had improved their general health or assisted with an unspecified medical condition (Food Standards Agency, 2019). CBD is often incorporated into holistic health routines due to its perceived 'balancing' or anti-inflammatory effects, even when no illness has been diagnosed (GlobalWebIndex, 2020; Goodman et al., 2022). The idea of CBD as a natural remedy appeals to health-conscious consumers who may be motivated by the avoidance of pharmaceuticals and maintaining overall wellness. In fact, about 22% of CBD users reported that CBD had helped them reduce or replace over-the-counter or prescription medications for issues such as pain or anxiety (Goodman et al., 2022; SingleCare, 2025). One study showed that 62% of users reported using CBD to relieve specific health problems; the most commonly mentioned being pain management, anxiety and depression (Corroon and Phillips, 2018).

Other health conditions

Specific medical or quasi-medical motivations also drive the consumption of CBD. Consumers often report using CBD to treat depression, inflammation (e.g., local inflammation or skin issues), arthritis, back pain or fibromyalgia (Food Standards Agency, 2019; Consumer Reports, 2019). In surveys of fibromyalgia patients and other people with chronic pain, 30%–40% reported using

CBD for relief (Consumer Reports, 2019; Goodman et al., 2022). Although limited clinical evidence exists for many of these conditions, the perception that CBD is helpful motivates consumers to try it (Choi and Hwang, 2023).

2.1.2 Other types of motivations

Unlike THC-containing cannabis, CBD cannot produce an intoxicating 'high', and thus recreational use is not a primary motive in most studies (Goodman et al., 2022). However, some studies have identified a subgroup of users who categorise their CBD use as recreational (Wysota et al., 2022a, 2022b). This likely reflects confusion or overlap with THC-containing cannabis use (McFadden et al., 2025). Many CBD users also use marijuana, and some obtain CBD products that contain traces of THC, or simply use the term "recreational" for non-medical use. In general, the literature suggests that consumers are driven far more by therapeutic and wellness goals than recreational activities when it comes to CBD (Choi and Hwang, 2023; Goodman et al., 2022). Curiosity, peer recommendations, and social trends can trigger initial use, but are not typically lasting motives (Wysota et al., 2022a, 2022b).

In addition, many people view CBD as a natural or safer alternative to pharmaceutical products for conditions such as chronic pain, insomnia or anxiety to avoid the side effects of conventional medications (Bhamra et al., 2021). Research shows that consumers agree that CBD has fewer negative health effects than opiate or prescription medications, tobacco, and alcohol, suggesting that the perception of its relative safety encourages its acceptance (Nguyen et al., 2023).

Among younger users, curiosity is another key driver: the desire to experience the effects of CBD, which offers some of the benefits of cannabis without the psychoactive effects (Geppert et al., 2023). As a result, some people use CBD recreationally for relaxation, but without the intoxicating high associated with THC (321CBD, n.d.). The common denominator of most motivations is the expectation of improved quality of life. An impressive 98% of European users who had tried CBD reported that it has had at least some positive impact on their lives (Jones, 2020).

2.2 OPPORTUNITIES SHAPING THE PERCEPTION AND USE OF CBD

In the MOA framework, "opportunities" refer to the external conditions that enable/constrain consumer behaviour. In the CBD market, opportunity factors include the legal-regulatory environment, the availability of products, social acceptance, and marketing influences. In the past decade, these external factors have shifted dramatically in favour of CBD use, albeit some barriers and ambiguities remain.

2.2.1 Legalisation and regulatory environment

The legal status of CBD is a crucial factor for both consumer access and wider social acceptance. In the mid-2010s, regulations varied substantially across countries and jurisdictions, with some countries banning CBD entirely and others permitting its sale under certain conditions. Many

European and Asian countries continue to enforce stricter limits on THC content or maintain unclear regulations, creating an inconsistent global regulatory landscape (GlobalWebIndex, 2020). An important milestone for Europe came in 2020 when the Court of Justice of the European Union ruled that hemp-derived CBD is not a narcotic and can be legally marketed if produced in line with the laws of a member state (Prohibition Partners, 2023). This legal clarification has given new impetus to the European CBD market, encouraging entrepreneurial innovation and the expansion of product lines. In countries where governments provide clear guidelines, consumers have greater confidence that CBD is safe (Food Standards Agency, 2019).

Conversely, unclear or restrictive regulations often hinder access and create uncertainty. For example, a UK survey found that while most CBD consumers believed their products were legal, a significant proportion held concerns about legality (Food Standards Agency, 2019). Many consumers also incorrectly assume that CBD products are fully regulated by health authorities; a 2020 US study showed that 25%–30% of young adults incorrectly believed that CBD was FDA-approved and clinically tested (Wysota et al., 2022a, 2022b). These misconceptions can increase acceptance among some, while discouraging others who are uncertain about potential legal or health risks (Goodman et al., 2022). In Europe, the legalisation of medical cannabis in several countries has helped to normalise CBD as a wellness product, although there are still legal grey areas, especially with edibles. Manufacturers often resort to workarounds, such as marketing CBD products as cosmetics or technical products. In Slovenia, the CBD market remains largely unregulated and products are sold even though they are not officially approved as food or medicine. The creation of a clearer legal framework, such as the recognition of CBD as an approved food supplement, would add significantly to legal certainty for manufacturers and improve access and safety for consumers (Majzelj and Zupancic, 2020).

2.2.2 Product availability and market access

The explosion in product availability and rapid expansion of distribution channels have considerably improved consumers' access to CBD products. Today, CBD is sold in a variety of retail environments, including dispensaries, pharmacies, health food stores, supermarkets, petrol stations, and numerous online platforms (Consumer Reports, 2019). In the United States, a recent survey found that 29.6% of CBD consumers purchased their products from dispensaries, 29% online, and 20.7% from pharmacies (Nguyen et al., 2023). Similar patterns have been observed in other major global markets, including the UK and Western Europe (GlobalWebIndex, 2020). In several European countries such as France, Germany and the UK, the proliferation of CBD specialty stores has dramatically increased retail awareness and accessibility. This wide distribution network also adds to awareness and contributes to the normalisation of CBD consumption. Consumers who previously did not actively seek out CBD are now more likely to come across CBD in their routine purchases, lowering the inhibition threshold for first-time consumption and promoting market acceptance (Consumer Reports, 2019).

At the same time, the product landscape has noticeably diversified, allowing for the greater personalisation of CBD consumption. Consumers can now choose from a broad range of formats, including oils, tinctures, edibles, capsules, vapes, beverages, topicals, cosmetics and even pet

products (GlobalWebIndex, 2020). In the UK, for example, tinctures are the most commonly used format, followed by vape liquids, capsules and creams (Food Standards Agency, 2019). Such a variety of products allows consumers to tailor their CBD consumption to their personal preferences, health concerns or lifestyle choices. For example, individuals who dislike inhalation methods may prefer ingestible formats such as edibles or oils, while those seeking targeted pain relief may opt for topical applications. Overall, the convergence of widespread distribution and diverse product offerings has not only increased accessibility, but also accelerated CBD's integration into health and wellness routines.

2.2.3 Social attitudes and cultural acceptance

The change in cultural attitudes has been instrumental in creating an environment favourable to the introduction of CBD. The stigmatisation of cannabis among the public has weakened considerably, which has enabled CBD to be recontextualised from a stigmatised cannabis derivative to a wellness-oriented product with perceived therapeutic benefits (Goodman et al., 2022). In 2023, 70% of Americans supported the legalisation of marijuana, a notable rise from just 24% in 1990 (Saad, 2023). This broader normalisation of cannabis products has paved the way for greater cultural acceptance of CBD as a non-intoxicating and accessible wellness product.

Consumers are increasingly differentiating CBD from high-THC cannabis products, viewing it as a wellness and self-care supplement rather than a 'drug' (GlobalWebIndex, 2020). As the stigma decreases, consumers feel more comfortable discussing CBD use with peers, family, and online communities, fostering a network of informal advocacy and peer-driven diffusion (Wysota et al., 2022a, 2022b). Many consumers report having first learned about CBD from friends, family, or social platforms rather than from medical professionals, highlighting the grassroots and socially embedded nature of CBD acceptance pathways (Wheeler et al., 2020; Wysota et al., 2022a, 2022b).

Celebrity endorsers and influencers on social media further contribute to the normalisation of CBD, especially among younger populations. Wellness influencers frequently promote CBD products for self-care, relaxation, beauty, and stress management, reinforcing the positioning of CBD as a mainstream lifestyle and wellness product (GlobalWebIndex, 2020). According to Forbes (2025), 45% of respondents now say that CBD use is socially accepted, suggesting that while it is not yet the majority, there is a clear trend toward normalisation that is expanding opportunities for consumer adoption.

The broader cultural movement toward wellness, natural products, and personalised self-care routines also creates favourable opportunity structures for the acceptance and market expansion of CBD. Consumers are increasingly emphasising holistic health solutions and natural supplements, which fits well with CBD's market positioning. Grand View Research (2023) notes that cannabidiol has become a widespread consumer trend driven by changing cultural perceptions and perceived health and wellness benefits. This synergy between wellness culture and CBD acceptance allows for further adoption across various consumer segments and supports the sustainable integration of CBD into daily health and self-care routines.

2.2.4   Marketing and information environment

CBD marketing strongly influences consumer perceptions and purchasing decisions by promoting the natural, therapeutic and non-intoxicating properties of CBD, often touting its efficacy for a variety of conditions (Choi and Hwang, 2023). This advertising environment raises consumers' interest and encourages them to try it, but can also create unrealistic expectations of CBD's benefits (Goodman et al., 2022). Parker et al. (2025) have shown that the majority of retailers featured advertising which presented CBD as a remedy for health conditions and/or used descriptors implying it is healthy or safe for consumers. Unlike pharmaceuticals, CBD products are often sold with limited formal oversight, which allows companies to use creative advertising strategies. With restrictions on direct-to-consumer advertising for cannabis-related products in many countries, companies rely heavily on digital marketing, influencer partnerships, in-store advertising, and packaging design to reach consumers (GlobalWebIndex, 2020).

Packaging and labelling play a vital role in perceptions of quality and safety. Consumers respond positively to third-party test certificates, organic labels, and clear dosage information, which add to perceived credibility and trust in the product. For example, experimental evidence shows that independent certification marks significantly increase consumer confidence and purchase intention (Choi and Hwang, 2023). Yet, the lack of standardised labelling and quality assurance remains a challenge in the CBD market, with inconsistent labelling sometimes leading to confusion or mistrust, especially when products contain inaccurate CBD or THC concentrations (Food Standards Agency, 2019). While quality concerns deter some consumers, others may be unaware of these inconsistencies due to limited access to reliable information (Goodman et al., 2022).

Economic factors also influence the opportunities and barriers for consumers in the CBD market. One key factor is financial capacity: CBD products can be quite expensive. High-quality CBD oils or drops can be costly, particularly when used regularly. According to European studies, the high cost is the second-most common reason explaining why some consumers do not use CBD (Prohibition Partners, 2023). Although prices have fallen somewhat as market competition increases and regulation (e.g., approval of CBD as a "novel food" in the EU) progresses, affordability continues to be an important factor, notably for low-income consumers (GlobalWebIndex, 2020).

Consumer information-seeking behaviour further influences decision-making in the CBD market. Recent research shows that consumers chiefly seek information via social media (35%), followed by government websites (21.2%), blogs or forums (15.4%) and healthcare professionals (10.4%) (Nguyen et al., 2023). While the availability of information has risen dramatically, the quality and reliability of these sources vary significantly, creating both opportunities and limitations for informed consumer decisions in the evolving CBD landscape.

2.2.5   Economic and market opportunities

DataTrek Research (2023) reports that consumer spending patterns on CBD products vary significantly across demographics, with affordability representing a critical factor influencing market expansion. High-quality CBD products often remain priced at a premium, which can limit

access for certain consumer segments, particularly those in lower-income brackets. Nonetheless, as the CBD market matures, increased competition and improved supply chain efficiencies are gradually influencing price reductions, establishing new opportunities for broader market participation. At the same time, research indicates that CBD purchase behaviours include both planned purchases (59%) and impulse buying (25%). This suggests that opportunity structures within the CBD market must accommodate both deliberate, research-driven purchase decisions as well as spontaneous, emotion-driven purchases. Pricing strategies, in-store promotions, and digital marketing campaigns that align with these behaviours can expand consumer reach while improving affordability and accessibility for different consumer segments.

Product innovation and diversification continue to expand consumer opportunities within the CBD market. Grand View Research (2023) identifies a strong upward trajectory in the development and market penetration of new CBD product categories. Notably, "nutraceuticals" held a 63.9% market share in 2023, reflecting the growing consumer demand for CBD products that support wellness and preventative health. The research also highlights medical over-the-counter (OTC) products as the fastest-growing segment, indicating expanding consumer trust and interest in CBD's therapeutic potential for self-managed health concerns. In addition, the proliferation of product forms, including topicals, analgesics, edibles, oils and tinctures, provides consumers with diverse options tailored to different preferences, usage patterns, and specific health or lifestyle needs. Such diversification enhances the CBD market's ability to meet individualised consumer demands while fostering brand loyalty and repeated purchasing, contributing to sustained market growth.

2.3 ABILITIES SHAPING THE PERCEPTION AND USE OF CBD

In the MOA framework, "abilities" refer to the consumer's internal capacity to access, evaluate and properly use CBD products. Even when motivation and opportunity are high, knowledge gaps, limited experience, and personal resources can constrain actual behaviour (Choi and Hwang, 2023).

2.3.1 Knowledge and awareness

Despite general awareness of CBD having grown substantially, many consumers still lack detailed knowledge about its properties, effectiveness, safety, and legal status (Wysota et al., 2022a, 2022b; Goodman et al., 2022). Studies show that many people are insufficiently aware of the effects and potential risks of CBD (Geppert et al., 2023). Many potential users are unsure where and how to buy a reliable product, or question the legality and safety of using CBD. Across Europe, the most common reason for not using CBD is a lack of trust in its effectiveness, often caused by a lack of knowledge about proper dosing and unrealistic expectations (Prohibition Partners, 2023). By 2020, over 90% of adults in the USA had heard of CBD, showing a very high level of awareness. However, misperceptions are still widespread. For example, around 25% of young adults in the USA incorrectly believed that CBD products had been approved by the FDA and extensively tested for their safety and efficacy (Wysota et al., 2022a, 2022b). Forbes (2025) reports that one-third of

adults in the USA are not sure if they know the differences between full-spectrum CBD, broad-spectrum CBD, and CBD isolate. This knowledge gap represents a significant limitation on the ability to influence consumer decision-making.

The psychoactiveness of CBD is also often misunderstood by consumers, with some believing that CBD products can cause a 'high', or confusing CBD with cannabis products which contain THC (Wysota et al., 2022a, 2022b; Goodman et al., 2022). In the UK, while most CBD users assumed their products were legal, a significant minority were unsure of the legal framework (Food Standards Agency, 2019). Research from Nguyen et al. (2023) also shows that respondents who had used CBD generally agreed that they understand the difference between THC and CBD, while those who had never used either product disagree. This finding suggests that product experience contributes to knowledge development, but also that knowledge barriers may prevent initial acceptance among new consumers.

In addition, most consumers rely on informal or non-scientific sources when looking for information about CBD. The vast majority say they have heard about CBD from friends, family, social media, or online communities, with far fewer consulting medical professionals (Wysota et al., 2022a, 2022b). Only a small proportion (less than 10%) of users state they received advice on CBD from doctors or pharmacists (Wysota et al., 2022a, 2022b). As a result, consumers often feel confident in their knowledge ("subjective knowledge"), while they lack an accurate, evidence-based scientific understanding ("objective knowledge") (Choi and Hwang, 2023). Such a discrepancy between confidence and competence creates risks as consumers may misjudge safe dosages, overestimate benefits, or fail to recognise potential drug interactions (Choi and Hwang, 2023; Goodman et al., 2022). Overall, this knowledge gap underscores the importance of public health education and clearer regulatory guidance to improve consumers' ability to make safe, evidence-based decisions in the evolving CBD landscape (Goodman et al., 2022; Wysota et al., 2022a, 2022b).

2.3.2 Prior experience and self-efficacy

Earlier experience with CBD or cannabis products significantly improves consumers' ability to use CBD effectively. Experienced users generally perceive greater benefits, feel more confident in dosing decisions, and report fewer concerns about risks or side effects (Choi and Hwang, 2023; Goodman et al., 2022). In contrast, non-users or people using CBD for the first time are more insecure, perceive more barriers, and are more likely to hold concerns about safety and legality (Wysota et al., 2022a, 2022b). Repeated use increases self-efficacy, leading to consumers gaining confidence in choosing products, adjusting the dose, and dealing with possible side effects (Choi and Hwang, 2023). Experienced users thus often develop personal routines for integrating CBD into wellness programmes and feel better able to assess product quality (Goodman et al., 2022). Experience also lowers perceived barriers as 'never users' express considerably more safety concerns than experienced users (Wysota et al., 2022a, 2022b). This suggests that people who have tried CBD once often develop a more positive perception, which improves their ability to confidently continue using it (Choi and Hwang, 2023).

2.3.3   Demographics, socioeconomic resources, and financial abilities

Demographic factors like age, income and education affect consumers' ability to use CBD by influencing access to information, affordability, and willingness to experiment (GlobalWebIndex, 2020; Goodman et al., 2022). CBD is more likely to be used by younger adults who embrace wellness trends and seek information online (Consumer Reports, 2019; Goodman et al., 2022; Lacasse et al., 2024). Older adults are a growing segment, particularly for pain management, but face additional barriers such as concerns with legality and health (Consumer Reports, 2019; Wysota et al., 2022a, 2022b).

Income has a significant impact on CBD adoption, with middle- and higher-income individuals better able to afford high-quality products and experiment with formulations (SingleCare, 2025; GlobalWebIndex, 2020). Approximately 44% of CBD consumers have a household income of between USD 30,000 and USD 100,000 (from €26,000 to ≈ €86,000, based on exchange rate in November 2025), indicating that middle-income groups dominate in the market (SingleCare, 2025). The global market valuation of USD 19.05 billion in 2023 underlines the significant consumer spending, whereas access for lower-income people remains limited due to the lack of insurance coverage (Grand View Research, 2023).

Economic ability also shapes purchase patterns, including planned (59%) and impulsive (25%) purchases, which impacts how consumers make CBD purchasing decisions (DataTrek Research, 2023). For CBD to be effectively used, consumers need to conduct cost-benefit analyses, including understanding dosage requirements, comparing alternative treatments, and evaluating the price-quality ratio.

2.3.4   Physical, practical and physiological abilities

Since CBD products are generally easy to administer (tinctures, gummies, topicals), physical ability is rarely a major barrier (GlobalWebIndex, 2020). Dosage uncertainty nevertheless remains a practical barrier and thus consumers must rely on trial and error, personal research or informal advice, leading to inconsistent results (Choi and Hwang, 2023; Goodman et al., 2022). At the same time, certain professional groups (e.g., athletes, military personnel) avoid CBD products due to concerns of testing positive for THC, even with legal hemp-derived CBD (Goodman et al., 2022).

2.3.5   Information evaluation, cognitive, and decision-making abilities

Given the prevalence of social media and Internet sources for CBD information (35% of consumers inform themselves via social media; Nguyen et al., 2023), consumers need to be able to distinguish marketing claims from scientific evidence, recognise credible sources, and critically evaluate the quality of research. Digital abilities, including Internet navigation, e-commerce use, online payment processing, and product review rating, influence access to CBD markets, with 29.2% of purchases being made online (Nguyen et al., 2023).

Consumers are also self-medicating, which requires the ability to recognise and monitor symptoms, adjust doses, and evaluate treatment effects while integrating CBD into existing therapies. Approximately 40% of consumers report discontinuing prescription medications after CBD use, indicating complex treatment management and self-monitoring skills (Nguyen et al., 2023).

Risk assessment and management are essential as 46% of consumers believe CBD could lead to a positive drug test (Forbes, 2025). Consumers must weigh the occupational and legal risks, potential drug interactions, product quality concerns, and social or reputational impacts before deciding to consume CBD.

2.3.6 Social and communication abilities

Notwithstanding low rates of consultation with healthcare professionals, effective use of CBD benefits from strong healthcare communication skills, including being able to articulate symptoms, a discussion of the alternatives, and accurate reporting of CBD use and outcomes. In addition, peer networks play an important role in brand selection, with 29.5% of consumers relying on the recommendations of friends or trusted individuals (Nguyen et al., 2023). Social skills in sharing experiences, critically evaluating peer advice, and building information networks thus contribute to consumers' effective and confident use of CBD.

2.4 THE PROFILE OF CBD CONSUMERS IN THE EU AND SLOVENIA

The use of cannabidiol (CBD) products has grown significantly in Europe in recent years. Research shows that around 10%–15% of European adults have tried CBD at least once. In France, around 10% of adults had already used CBD by the end of 2021, in Germany the figure was 11.4% (Casanova et al., 2022), with more than half the population being at least aware of CBD. Demographically, CBD users are more likely to be younger adults; people aged 18 to 24 are twice as likely to use CBD than those aged over 50, the largest proportion of whom have never heard of CBD (Prohibition Partners, 2023). Many users are already familiar with cannabis; one study reports that one-third of CBD users also use cannabis as a recreational drug (321CBD, n.d.).

CBD appeals to both men and women, although some studies show a slight male majority. In France, for example, around 70% of CBD users are men (321CBD, n.d.), yet the precise share varies from country to country.

There is little specific data on CBD consumption in Slovenia. One may indirectly infer that the proportion of users is slightly below the European average because the use of cannabis (THC) in Slovenia is also below the EU average (The Talman Group, 2023). Still, local sources report growing interest. In recent years, both the supply and demand for CBD products have risen considerably in Slovenia (CMS, 2024). CBD products are available in specialty stores, online, and even in pharmacies (as dietary supplements or cosmetic drops) (Siol.net, 2025).

2.5 CONCLUSION

This chapter provides a comprehensive review of existing academic research applying the Motivation, Opportunity and Ability (MOA) framework (MacInnis and Jaworski, 1989) to understand why consumers use CBD, how they perceive it, and what influences their consumption patterns.

Motivation refers to the internal psychological drivers for engaging with CBD products. Across studies, CBD use is primarily driven by health and wellness rather than recreation. The most common motives are pain relief, anxiety and stress reduction, and to improve sleep, with many users also reporting general wellbeing benefits and, for some, substituting CBD for over-the-counter or prescription drugs. Curiosity and peer influence can lead to initial trials – especially among younger adults, yet continued use typically depends on perceived therapeutic effects.

Opportunities refer to the external conditions that either enable or constrain consumer behaviour with respect to CBD. External enablers have increased: clearer (albeit uneven) regulations following the CJEU ruling, broader retail access (pharmacies, health stores, online, dispensaries), and a strong wellness culture that is reducing the stigma and normalising CBD. Marketing promotes the "natural" and non-intoxicating qualities; third-party testing and labels can build trust, yet inconsistent labelling and legal or health ambiguities persist. Price remains a significant barrier affecting both trial and continued use.

Abilities relate to a consumer's internal capacity, knowledge, and resources needed to evaluate and properly use CBD products. Despite high awareness, many consumers lack precise knowledge about the effects, dosing and legality of CBD, and differences from THC; misconceptions (such as it being FDA-approved or psychoactive) are common. Prior experience increases self-efficacy (confident dosing and product selection) and lowers perceived risks; non-users are more uncertain. Demographics and resources play a role: younger and middle-income consumers are more active, while affordability constraints and limited guidance from healthcare professionals can hinder informed, safe use.

In Europe, lifetime use of CBD typically ranges from 10%–15%, skewing younger and often overlapping with familiarity with cannabis; gender patterns vary by country. For Slovenia, although direct data are limited, it is likely that CBD use is slightly below the EU average; interest and availability are increasing (specialty shops, online, some pharmacy presence). Clearer regulations, pharmacist or doctor guidance, trustworthy labelling, and affordability could help with more informed adoption.

3   QUALITATIVE STUDY ON CONSUMER PERCEPTIONS OF PRODUCTS CONTAINING CBD

In this chapter, the qualitative research component of the study is presented with the aim to determine how consumers perceive products that contain CBD. The central aim is to gain in-depth understanding of their familiarity with these products, their experiences and the factors that impact purchasing decisions. The use of a qualitative approach permits the exploration of attitudes, motivations and beliefs in a natural conversational context, providing comprehensive insights into consumer behaviour, with semi-structured interviews guiding the data collection process.

3.1   PURPOSE, OBJECTIVES AND METHODOLOGY OF THE QUALITATIVE RESEARCH

The objective of the presented research is to better understand the way consumers perceive products that contain CBD. The main focus is on the extent to which these products are familiar to them, and what are their experiences with them. A key goal is to explore the purchasing process and identify all the factors that influence it. The research concentrates on examining three aspects: motivation, opportunity and ability. In particular, it seeks to study the way consumers perceive CBD products and how various factors shape that perception. The goal is to understand how consumers view CBD products, the beliefs they hold regarding the benefits and risks, and the sources of their information.

Qualitative research focuses on questions that arise from the curiosity of both the researcher and the participants. It is intended to understand phenomena from the perspective of "Why?", "How?" and "In what way?". Emphasis is placed on a holistic approach, where questions are addressed in a natural, everyday environment without oversimplification. In this process, the researcher takes on the role of a listener, acquiring deeper insights through open conversation. The research process unfolds in continuous interaction between practice and theory. Noteworthy advantages of qualitative research include in-depth insights into consumer behaviour, opinions and preferences, along with an understanding of the purchasing process. Conversations are conducted in a relaxed manner, which encourages honesty and authentic responses. Such an approach enables a better analysis of responses to marketing factors and a deeper understanding of the quality of individual attitudes (Kordeš and Smrdu, 2015).

However, the qualitative approach also has limitations. The results are less generalisable due to the smaller sample size and the possibility of subjective interpretation. Moreover, the replicability of studies is often in question, and it is not always possible to draw universal conclusions (Kordeš and Smrdu, 2015).

To support the implementation of individual and group interviews (which are both elements of the qualitative methodology), a semi-structured guide was prepared (Appendix 1). The guide is made up of several sections, thematically linked to the motivation, opportunity and ability model (MacInnis and Jaworski, 1989) that also served as the backbone of the guide. The basic framework of the questions was established according to the literature review presented in Chapter 2. More

specifically, the guide begins with brief participant introductions, then proceeds through six themed sections. First, it assesses the baseline understanding of CBD and awareness of related products. Next, it examines perceptions, attitudes, and motivations for use, including health goals and expectations. The guide then addresses concerns and risks, such as personal or observed experiences, side effects, legality, stigma, cost, and other barriers. The fourth and fifth sections focus on patterns of use (products, dosing, frequency, changes over time, routes) and purchasing behaviour (decision factors, channels, information sources and credibility, as well as social influence). The guide concludes with future intentions, exploring how behaviour might change with regulation or availability, societal trends, and ideal scenarios, followed by an open invitation to make any final comments.

A total of three interviews was conducted: one in person and two via the Zoom platform (one individual and one group). The interviews were conducted in Slovenian since all participants were Slovenian. The data collection took place in the summer of 2024. No specialised qualitative analysis software was used; instead, transcripts were manually prepared, read and reread multiple times, and analysed through an iterative close-reading process.

3.2   DATA ANALYSIS

The conversation analysis was conducted using content analysis, beginning with the coding of transcripts from the in-depth individual and group interviews. In the first step, the transcripts are coded to reduce the volume of data and to group fragmented meanings of the research topic into coherent and meaningful units. Once the coding has been completed, broader themes or those holding substantive relevance to the entire set of codes are identified based on the meaning of the codes. These identified themes define the key aspects of the research. In the third step, the recognised themes are connected into a thematic network. This process follows the principle of grouping content-consistent clusters, incorporating theoretical foundations when necessary. The fourth step involves describing and analysing the network. The task here is to integrate the data and interpretations and prepare a report summarising the research findings (Roblek, 2009).

The analysis is based on three interview transcripts (I1, I2, Group) regarding perceptions and experiences with CBD-containing products. What follows is a summary of the main themes, content coding using subcodes, highlighted by quotes that illustrate each code/subcode. For each code/subcode, detailed analysis based on the transcripts is provided (Table 1).

Table 1: Coding Framework

Main theme	Subtheme
Knowledge of CBD	Basic understanding of CBD
	Awareness of product forms
Experience with use	Personal experiences of users
	Ways of using CBD
	Experiences of close acquaintances
Benefits and effects	Physical effects
	Psychological effects
	Therapeutic applications for illnesses
Barriers to use	Costs
	Lack of information
	Dilemmas and stigma
Availability and marketing	Product availability
	Perception of marketing
	Regulation and legality
Differences between groups	Generational differences
	Differences between users and non-users

3.2.1 Description of participants

The conversations were organised in three parts. First, we conducted an in-depth interview with a woman, followed by an interview with a man (I2), and finally a focus group made up of two women (I3, I4) and four men (I5–I8). Most participants were between 21 and 28 years old, with one participant aged 47 and one female participant aged 52. Half the participants had no prior experience with or knowledge of CBD products, while the remaining four had varying levels of experience, ranging from some to extensive (Table 2).

Table 2: Sample description

Label	Gender	Age	Experience
I1	Female	52	Extensive
I2	Male	47	Extensive
I3	Female	27	Moderate
I4	Female	28	Moderate
I5	Male	23	None
I6	Male	21	None
I7	Male	25	None
I8	Male	23	None

3.2.2   Detailed thematic content analysis

3.2.2.1 Knowledge of CBD

All conversations began with the question asking how familiar participants were with CBD and related products. This section presents analysis of their knowledge and basic understanding, followed by an assessment of their awareness of different product forms.

Basic understanding of CBD. In the discussion, most participants demonstrated a general understanding of CBD, recognising it primarily as a therapeutic agent and a non-psychoactive component of cannabis. However, notable differences were evident in the level of knowledge. Most interviewees understood CBD as a natural compound derived from cannabis and did not associate it with the intoxicating effects of THC. Participants I3 and I1 identified its therapeutic properties within a historical context, while I4 and I8 expressed limited knowledge and a need for more information. I2 and I6 contributed scientific perspectives, such as the distinction between CBD and THC, indicating a deeper level of understanding. Two younger men from the group discussion showed no familiarity with the term or its meaning.

"It comes from cannabis/hemp and doesn't cause psychedelic issues. It's a product of industrial hemp." (I1)

"... I'd say it's a natural compound, basically, with remarkable effects – primarily on health – but it's still under-researched." (I2)

"I think the C stands for cannabis. I know they make drops from it." (I3)

Awareness of product forms. The discussions (both individual and group) also addressed participants' awareness of the various forms of CBD products available. Differences here reflect participants' exposure to different sources of information. Being aware of ointments, creams and drops was more common, with even less-informed participants (e.g., I5) mentioning these products. More specialised forms, such as therapeutic pastes and suppositories, were mostly recognised by more informed individuals, especially I1 and I2, who demonstrated a solid understanding of the broader range of CBD product types.

3.2.2.2 Experience with use

The second identified theme is experience with use, which encompasses three aspects: personal experiences of the participants, specific ways of using CBD in terms of form, duration and purpose, and the experiences of close acquaintances.

Personal experiences of users. Among the interview participants, only three had used CBD products, either in the past (I4) or currently (I1 and I2). CBD use was often associated with particular health needs, such as stress, illness, or a preventive strategy. For example, participant I1 used CBD during a period of illness, illustrating its role as a personal therapeutic aid. I2 was using CBD to manage stress, although not regularly, which reflects occasional use as a quick solution. Participants valued personal experience as an important source of information for future use.

"I also use it as edible oil. For example, during my illness – cancer – I had a strong need for this oil." (I1)

"When it comes to drops and that, I'm definitely a user – probably a few times a month, like in situations of stress." (I2)

Ways of using CBD (form, duration, purpose). Across the entire sample, only a few individuals had a prior experience of consuming CBD products and the analysis of usage methods is accordingly based on their input. The diversity in usage reflects the adaptability of CBD products to users' specific needs. For instance, ointments are popular for skin issues, drops are used for sleep, and edible oil is taken for general health support. This variety shows that CBD is used in a wide range of products targeting individual concerns.

Participant I1 highlighted that she regularly consumed CBD-infused edible oil while she was ill, even though she no longer does this; however, she still prepares spreads from hemp seeds. I2 mentioned using drops for sleep and ointments for rashes.

"I also made spreads from the seeds myself." (I1)

"Also in general, I mean easier, better sleep, better... in cases of insomnia, nervousness, stress, and those things – CBD really helps me, or generally these CBD products." (I2)

Experiences of close acquaintances. An important aspect of how individuals perceive CBD products is the experience of a person close to them. I1 noted her mother's positive experience, which reinforces intergenerational trust in CBD's effectiveness. She also noted the importance of personal connections, stating she would turn to neighbours as a potential source of information. I2 pointed to clinically significant effects of CBD in his daughter's case, which supports its therapeutic value. I4 shared a mixed experience involving her grandfather's use of CBD during cancer treatment, describing uncertainty about its effectiveness. Interestingly, I7 mentioned hearing about positive effects from several people but felt their claims were exaggerated. Overall, the experiences of close others contribute to generally positive views on CBD.

"For example, my mother took drops – okay, a one-to-one ratio, so there was a bit of THC in it – it helped with calming down and sleeping better." (I1)

"My grandfather used CBD during the cancer treatment, but we didn't really know if it helped." (I4)

"I've heard from several people that it helps with sleep and stress management, but it seems like there's a lot of exaggeration around its effects." (I7)

3.2.2.3 Benefits and effects

The discussion about knowledge and experiences with CBD was followed by the topic of its benefits and effects. Participants mentioned a variety of effects, which we categorised as physical effects, psychological effects, and therapeutic applications for medical conditions.

Physical effects. Several participants emphasised the use of CBD for pain relief and recovery. It was reported that CBD helps with skin conditions like dermatitis and psoriasis, in particular noting that it does not clog pores but actually shrinks them them. It was also described as having anti-inflammatory properties and assisting with skin rashes and insect bites. Regarding medical conditions, it was mentioned as being beneficial for epilepsy, diabetes, and cancer treatment. The compound is known for improving sleep and reducing stress. Physical benefits also include its role in the nervous system's functioning as the body naturally produces cannabinoids, and CBD supplements enhance the nervous system's performance. Its nutritional value was also pointed out since it contains antioxidants, minerals, vitamins, and omega-3, -6, and -9 fatty acids.

"There's a lot written about this, about the healing properties of CBD. It's quite extensive – calming, helps with various skin issues like dermatitis and psoriasis." (I1)

"It's actually called therapeutic Hemptouch cream, usually sold at Sanolabor, costs around 30 euros. It's a bit more expensive, but it also lasts a long time, and it's amazing for mosquito bites, insect stings, all sorts of rashes, scrapes…." (I2)

Psychological effects. The most commonly mentioned effects are its calming properties and its assistance with sleep. Informants (e.g., I1 and I7) reported that CBD helps with managing stress and promoting relaxation. Its impact on the nervous system is especially emphasised, with claims that it supports better functioning and communication between cells, which leads to a greater sense of calm. It is important to note that some participants (e.g., I7) believed that the psychological benefits of CBD are sometimes exaggerated. In any case, several people confirmed its effectiveness in dealing with insomnia and stress, although some argued that it might not be a long-term solution.

"It's quite comprehensive – meaning, it has a calming effect…." (I1)

"I've heard from multiple people that it helps with sleep and managing stress…." (I7)

"I know they make drops from it, and it's used as a remedy for relieving stress, tension, and so on." (I3)

Therapeutic applications for illnesses. The final topic within the benefits and effects of CBD involves its therapeutic use for various medical conditions. Several participants shared their personal experiences (I1) or the experiences of close family members (I2, I4) using CBD to treat or alleviate disease. I1 stressed that she used CBD oil during her cancer treatment, while I4 described giving CBD drops to her grandfather while he was ill with the same disease. I2 shared his experience of using CBD to treat his daughter's epilepsy and also mentioned its potential for treating cancer and Crohn's disease. I1 additionally referred to its benefits for managing diabetes and schizophrenia. Other participants mentioned milder psychological and physical effects.

"It's used for treating cancer, epilepsy, and other diseases." (I2)

"During my illness – cancer – I had a strong need for that oil." (I1)

"Also for relieving symptoms of epilepsy and schizophrenia." (I1)

3.2.2.4 Barriers to use

A topic that complements the view on CBD's benefits and effects is the perception of **barriers to use**, which is important to examine for both users and non-users. Three key subtopics are in focus: **financial cost**, **lack of information**, and **doubts and stigma**.

Cost. In the interviews, half the participants mentioned financial cost as a potential challenge or barrier to using CBD. Both I4 and I6 emphasised the high price of CBD products as a major obstacle to regular use. I4 noted that CBD products are financially out of reach for younger people, such as students. I2 pointed out that the high cost of CBD limits access for average users and is particularly burdensome for those needing it long-term for chronic conditions.

"The thing is, for medical use, the cost can easily reach around 300 euros per month." (I2)

"The seeds are expensive, I just remembered. Like when you buy them – it's not cheap to buy a pack of hulled hemp seeds. I can't remember exactly how much it is, but it's not cheap. And when you make a spread out of it, it's gone in no time." (I1)

"And the price – for example, 10-milliliter CBD drops cost anywhere from 50 to 100 euros or more. A regular student with a part-time job or scholarship can barely afford that... Personally, I don't use it because of the cost, and I'm not sure I would regularly." (I4)

"If a doctor prescribed it, I'd probably take it, otherwise I don't see a reason to spend two euros on it." (I6)

Lack of information. Another barrier described by several participants is the lack of information. On one hand, some feel there is insufficient research in the field of CBD (e.g., I5) while, on the other hand, consumers are not adequately informed about the existing findings. Two participants (I3 and I6) pointed out that a consumer without insight into both the positive and negative aspects of a product is unlikely to make a purchase, something I3 especially emphasised. A notable point was raised by I2, who argued that people in leadership, policymaking, and retail positions often lack sufficient knowledge about CBD.

"From a user perspective, I feel like I don't have enough information about these things. I don't know – I'm the kind of person who, if I don't have enough information, I'm not going to consume something." (I3)

"Maybe it's because I don't know enough studies, but if someone explained them to me in more detail and I decided it was suitable for me, I'd consider giving it a try. But based on the information I have now, I'd rather say no, because I don't know how it would affect me, and I'm also concerned about possible future health issues." (I3)

"I'd say the main issue is the lack of knowledge. I think a lot of people are like me – they're just not familiar with it. People might not be aware of the positive and negative effects, so they don't even consider it." (I6)

"This generation now holds the decision-making power – in healthcare, ministries, politics, everything – and they also make up a larger voting base, they're older, and that actually contributes to this shallow understanding and lack of deeper knowledge. It's a big issue." (I2)

Dilemmas and stigma. The biggest stigma associated with CBD is its connection to marijuana and THC. According to several informants (e.g., I1, I3), older people in particular often assume that CBD will 'get you high' or lead to addiction. I2 stressed that a large part of the stigma comes from the subcultural appearance of certain CBD advocates; people are put off by "Rasta hairstyles and Jamaican shirts", which can undermine the credibility of CBD in the public eye. Many people do not understand the difference between CBD and THC, triggering misconceptions and fear. Some worry that using CBD could become a gateway to stronger drugs (I) or addiction in general (I3).

"I think some older folks are actually open and willing to try things, but since I don't hang out with them much, I'm not sure. Still, from what I've heard, the reactions are mostly positive – except for the fear that it's a drug. But once you explain it, they start to see it differently." (I1)

"When you see a few people talking about it, they all have these Rastafarian hairstyles, all wearing Jamaican T-shirts, and they're saying how cannabis should be accepted. But I'm speaking from a medical point of view – our family went through a serious issue. These things need to be separated. It's all the same plant, but the public image matters, and the media plays a big role in that." (I2)

"Maybe it's just my personal opinion, but I think there are other ways to relax – like sports, music, or drawing. When we start consuming and relying on certain substances, there's a risk of developing a dependency, which can make it hard to imagine doing things without that extra help." (I3)

3.2.2.5   Availability and marketing

We also spoke with the participants about the availability of CBD products and their marketing. The topics were organised in three thematic categories: product availability, perceptions of marketing, and regulation and legality.

Product availability. According to the participants, CBD products are generally considered to be quite accessible and widely available. Some stated that CBD is "totally accessible" and can be found in many stores, including pharmacies, Sanolabor, dm, Müller, and organic/natural product shops (I1). Others pointed out that even greater availability in everyday retail locations (such as petrol stations) could help normalise CBD in society, yet that might also reduce consumer trust in product quality (I4). One informant (I6) emphasised that the presence of these products in pharmacies and prescriptions by doctors would be key to more widespread use. The biggest challenge in terms of availability is not physical access to the products, but the lack of knowledge and awareness about CBD. Many people simply do not consider it an option. The high prices were also mentioned as a potential barrier, especially for people on lower incomes.

"Once this is in pharmacies and doctors are actually prescribing it, then people will use it. If it's good for you, your doctor will prescribe it at some point. That's all there is to it." (I6)

"I think they're totally accessible, right? Pharmacies, Sanolabor, and... most of those shops – I think even DM, Müller, don't they have it all too? Seems like a lot. And of course, drops and such are available at Sanolabor, pharmacies, and those organic/eco stores." (I1)

"I've seen that it's available in retail, like at Sanolabor." (I4)

Marketing of CBD products. Participants perceive the marketing of CBD in various ways. One concern raised was the lack of advertising. I3 noted that she had not seen any CBD product advertisements, and I4 felt that these are sensitive topics to promote. According to I2, educating sales staff is also a crucial aspect because store employees often lack the necessary knowledge about CBD products, making it harder to advise customers properly.

Several informants (I4, I2, I3, I5) highlighted the importance of word-of-mouth as the primary method of spreading information and recommendations about CBD. I3 mentioned social media as a potentially effective channel for reaching consumers, while I5 and I6 expressed the opposite opinion, saying they would not trust that source. I2 suggested that in order to improve public acceptance of CBD the communication strategy should shift away from the stereotypical images often associated with its users.

"From a marketing standpoint, these are very sensitive topics to advertise." (I4)

"Promotions could be interesting too. For example, if you saw a booth in a store presenting a product, that could be a good way to introduce it – alongside social media." (I3)

"The first information usually comes from, you know, you type something into Google, or maybe you ask a neighbour – they might even grow or plant it themselves, so I think it's very direct...." (I1)

"If I saw it on social media, I'd probably just ignore it. I'd be more likely to look into it if I heard about it from someone." (I5)

"I'd also question whether a product like that belongs at a place like Petrol (a petrol station). I4 made a good point – personally, I'd prefer to buy it at a pharmacy or at least a specialised store for these types of products... At a pharmacy, you're focused on medications and might not pay much attention to supplements." (I4)

Regulation and legality. While the topic of regulation and legal frameworks was less discussed in the interviews, I5 noted that it is generally legal to sell CBD, with strict monitoring of THC content in products. I1 and I2 suggested that the laws around cultivation should be relaxed as the current regulations are limiting the industry's development. A more lenient legal framework could improve availability and reduce prices.

I2 also mentioned complications while traveling with CBD, citing confusion about whether these products can be brought across borders or through airports. Regulatory issues are particularly problematic in the context of medical use. The same informant described a paradox: doctors are aware of CBD's benefits, but are not allowed to recommend it publicly. He also noted that a health

insurance provider had stopped covering certain CBD products. A comment indirectly tied to regulation came from I8, who viewed pharmacies as trusted locations at which the products are verified and comply with legal standards.

"As far as I know, CBD is completely legal, but they monitor the THC content in the products. I think it's fine for sale." (I5)

"Right now, when I go on a business trip, I have a problem taking CBD with me. At the airport – how am I supposed to bring it? If I get anxious, I'll just take a Persen pill instead of carrying the drops." (I2)

"But I'd prefer to choose a product I can buy at a pharmacy, where I know it's been checked and is reliable." (I8)

3.2.2.6 Differences between groups

In the final section, we analyse differences between various groups. First, we focus on generational differences, before looking at distinctions between CBD users and non-users.

Generational differences. The analysis reveals evident generational differences in the perception of CBD. According to two informants (I1 and I2), older individuals tend to have more prejudice and fear, largely due to associating CBD with drugs. Interestingly, I1 observed that some older adults, despite being initially hesitant, are quite open to trying CBD products, especially when someone clearly explains the difference between CBD and THC. I2 added that the baby boomer generation is particularly hesitant because of their experiences with strict drug prohibition laws. In contrast, I6 believed that younger people do not see the need for CBD use unless they have a specific health concern. Still, once older people overcome their initial resistance, they often use CBD for various health issues (I1).

"I feel like our age group isn't really the target audience for these kinds of products. People between 20 and 30 don't feel a big need for alternative medicine." (I6)

"A lot of people have prejudice, especially older folks – or that middle-aged group, those around 70 today." (I1)

"It seems like it's mostly that boomer generation that grew up during strict prohibition –that it's a drug, it's harmful, whatever. I think the younger generations are more open to it. So, it really feels like a generational issue." (I2)

Differences between users and non-users. An insightful contrast also appears between CBD users and non-users. Users demonstrate greater understanding of CBD's therapeutic properties and the CBD–THC distinction. Their comments reflect a deeper level of research into product types and methods of use, allowing them to make informed and confident choices.

Users emphasised CBD's positive effects in terms of managing stress, improving sleep, and relieving pain. Their perspectives are based on personal experience and noticeable results. Non-users, however, tended to express hesitation due to a lack of personal experience and persistent stigma. Non-users often cited the cost, lack of information, and societal prejudice as the major reasons for not using CBD. In contrast, users overcame these barriers by seeking out additional information and trying the products themselves.

Users had observed a shift in views on CBD, especially among younger generations, who appear more open to its use. Non-users, meanwhile, tended to voice concerns arising from deep-seated social biases and insufficient education about the difference between cannabis and CBD.

3.3   CONCLUSION OF THE QUALITATIVE STUDY

This analysis is based on interviews with participants who shared their opinions, experiences and observations concerning CBD-containing products. Participants demonstrated a basic understanding of CBD as a non-psychoactive compound derived from cannabis, which many recognise for its therapeutic effects. While drops and creams are the best-known forms, others, like pastes or suppositories, were less familiar, revealing differences in exposure to information.

Experiences with CBD use were mostly positive, particularly in relation to pain relief, stress management, and improved sleep. Participants emphasised the importance of proper dosing and access to reliable information. Accounts given by close contacts of positive outcomes helped reinforce trust in these products.

CBD's benefits were seen across physical and psychological dimensions, with therapeutic potential for treating chronic conditions. Still, participants expressed the need for more research and scientifically verified evidence of its efficacy. Key barriers included the high costs, lack of clear guidance, and stigma linked to its association with THC. Limited access in rural areas and insufficient advertising were also noted, leaving consumers without enough information.

The stigmatisation of CBD, due to its historical link with cannabis, along with generational differences, also affected acceptance and use. Younger generations tended to be more open to CBD use, whereas older individuals often expressed greater hesitation and doubts.

The analysis reveals a diversity of experiences and perceptions of CBD products among participants. While many recognise clear benefits, barriers such as the cost, stigma, and lack of information remain considerable challenges to broader adoption. A stronger focus on education, product accessibility, and clear, trustworthy information could help improve public acceptance of CBD and promote its use for therapeutic purposes.

4 QUANTITATIVE STUDY ON CONSUMER PERCEPTIONS OF PRODUCTS CONTAINING CBD

This chapter outlines the purpose and objectives of the quantitative study, which aimed to investigate consumer behaviour relative to CBD products in Slovenia using the Motivation, Opportunity and Ability (MOA) framework (MacInnis and Jaworski, 1989). The research focused on understanding different factors that influence CBD use, assessing both general perceptions and model-specific factors.

4.1 PURPOSE AND OBJECTIVES OF THE QUANTITATIVE RESEARCH

The purpose of the quantitative research was to examine the behavioural, cognitive and emotional aspects of consumers' relationship with cannabidiol (CBD) products via the lens of the MOA framework (MacInnis and Jaworski, 1989).

We aimed to assess some general perceptions and behaviours as well as those specific to the MOA model. We evaluated the level of awareness and use of CBD products in Slovenia, how respondents perceive their benefits and risks, and which factors they consider while deciding whether to use/ purchase such products. The main objective was to identify the factors influencing behavioural intention to use CBD products, the role played by social norms, subjective and objective knowledge, and the importance of various information sources in shaping attitudes. Additional goals included understanding the differences between users and non-users, determining barriers to use, and assessing views on responsibility for product quality. Emphasis was also placed on examining the influence of attitudes to dietary supplements and health on the intention to use CBD.

4.2 DESIGN AND PARTICIPANTS

The study was conducted using a quantitative methodology, specifically through an online survey. A quantitative approach allows for the systematic collection of data across a larger population and enables comparisons between groups. It supports the use of statistical analyses, such as frequency distributions, means, standard deviations, and regression analysis, which help in examining relationships between variables and predicting behaviour (Bryman, 2012). With quantitative analysis, hypotheses can be tested, and the impact of various factors on particular outcomes can be quantified, ensuring objectivity and the replicability of the results (Creswell, 2014).

To assure data quality, the survey included attention checks with directed queries (Paas and Morren, 2018). Since the data collected in this study were cross-sectional, we implemented several procedural measures to minimise common method variance (Podsakoff et al., 2024). For instance, we avoided lengthy scales and common scale anchors, minimised the repetitiveness and grammatical redundancy of items, and grouped the items of each construct in a separate response table.

In collaboration with a market research agency, we sampled 510 participants who were roughly representative of the Slovenian population in terms of age and gender. The study was conducted in the Slovenian language. All research activities, including the data collection and analysis, were carried out in the summer of 2024. All constructs were operationalised using previously validated multi-item measurement scales. A structured questionnaire included closed-ended questions, multi-level (e.g., Likert) scales, and demographic questions (see Appendix 2). The questions and statements were adapted from existing studies (e.g., Casanova et al., 2022; Choi and Hwang, 2023; Geppert et al., 2023) (sources for the measurement scales can be found in Appendix 3).

Table 3 provides a comprehensive framework for understanding consumer behaviour related to CBD (cannabidiol) products that captures the central concepts analysed in this study. These concepts are divided into two major sections. The first section considers CBD use and perceptions, offering a general overview of how consumers interact with CBD, while the second section focuses on the factors nested within the Motivation, Opportunity and Ability framework.

Table 3: Overview of the key concepts examined

Main category	Subcategories	Concepts
CBD use and perceptions		Awareness Use of CBD products Frequency of use Forms of use Perceived determinants of product quality Perceived responsibility Attitudes to the use of dietary supplements Health involvement Factors influencing intention to use Intention to use CBD products
Motivation, Opportunity, and Ability factors	**Motivation factors**	Use by others Attitude to CBD products Perceived risk Perceived benefits Perceived barriers Influence of social norms on non-use Consideration of future use
	Opportunity factors	External cues to action Social norms concerning usage Purchase channels used
	Ability factors	Source of information used Preferred sources of information about CBD products Subjective knowledge Objective knowledge

The first section includes subcategories such as awareness, which assesses whether individuals have heard of CBD, and use of CBD products, which measures whether they have ever tried them. In addition, frequency of use refers to how often consumers incorporate CBD into their daily lives,

while forms of use indicates the type of products used, such as oils, creams, capsules or vapes. Other vital elements include what consumers perceive to be determinants of product quality, such as origin or certification, and their perceived responsibility in terms of who should ensure a product is safe (e.g., regulators, producers, retailers). The framework also assesses attitudes to the use of dietary supplements in general, health involvement (how much value consumers attribute to their health) and various factors that influence the intention to use CBD. These factors culminate in a measure of intention to use CBD products that reflects the likelihood of future CBD product use.

The second section is structured around the Motivation, Opportunity and Ability (MOA) framework. Motivation factors encompass internal beliefs and social influences that lead individuals to consider or avoid CBD. For example, use by others (such as peers or influencers) can play a role in normalising CBD use. Other motivating factors include attitudes to CBD, perceived risk and perceived benefits, all of which influence the attractiveness of CBD products. The presence of perceived barriers (such as cost, legal ambiguity or lack of access), the impact of social norms on non-use and the consideration of future use reflect the complexity of individual decision-making in this area.

Opportunity factors include the external environment that enables/constrains CBD use. These refer to external cues to action such as advertising or media exposure, along with social norms of use that relate to broader cultural or societal acceptance of CBD. In addition, the purchase channels used (e.g., online retailers, pharmacies, specialty stores) show how accessibility and convenience influence consumer behaviour.

Finally, ability factors describe the individual's capacity to make informed decisions regarding CBD. These include the source of information relied on, such as healthcare providers or online platforms, and preferred information sources, which reflect a level of trust and credibility. The table also distinguishes subjective knowledge (how much people think they know about CBD) from objective knowledge (what they actually know, as measured by factual questions).

As mentioned, a total of 510 respondents participated (48% female; 52% male). The average age was 42.3 years, with just under one-quarter (23.2%) of the participants being in the 41–50 age group, while 22% were aged 31–40, and 21.4% aged 51–60. A little over one-quarter of the sample (26.7%) came from the Central Slovenia region, and half (50.2%) reported having completed 4-year secondary school. The second-most common level of education was, according to the Bologna system, a college or master's degree (15.5% of respondents), followed by a vocational school (14.6%). The majority of respondents (65.2%) reported being employed, while 11.1% were retired, and 10.2% were students. Concerning household size, most were living in four-person households (27.6%), followed by three-person households (26.2%), and two-person households (23.4%) (Table 4).

Table 4: Sample demographics

Variable	Category	Number	Percentage
Gender	Male	265	52.0
	Female	245	48.0
Age	Up to 20 years	31	6.2
	21–30 years	85	16.7
	31–40 years	112	22.0
	41–50 years	118	23.2
	51–60 years	109	21.4
	61 years and above	54	10.5
Income	No income	19	3.7
	Up to €500	148	29.1
	€501–1,000	94	18.4
	€1,001–1,500	160	31.4
	€1,501–2,000	71	13.9
	€2,001–2,500	26	5.0
	€2,501–3,000	15	2.9
	Over €3,000	9	1.9
	Prefer not to say	62	1.9

4.3   ANALYSIS OF RESULTS

This chapter presents detailed analysis of the empirical data collected from the survey respondents regarding their awareness, attitudes, behaviours and perceptions related to CBD products. In the sections below, usage patterns, motivational and contextual influences, information sources and perceived barriers are examined to provide insight into the factors influencing consumer decision-making. The results serve as a basis for interpreting the determinants of the adoption and consumption of CBD products.

4.3.1   CBD use and perceptions

Awareness. The first substantive question answered by all respondents enquired whether they had heard of CBD (cannabidiol). The vast majority (82% or 418 individuals) answered in the affirmative, while 18% (92 individuals) did not (Table 5).

Table 5: Responses to the question "Have you heard of CBD (cannabidiol)?"

	Number	Percentage
Yes, I have heard of it.	418	82.0
No, I have not heard of it.	92	18.0
Total	510	100.0

*n=510

Use of CBD products. The next question concentrated on experiences with consuming or using CBD products was answered by the 418 respondents (82%), but not by the remaining 92 (18%) who had not heard of CBD. Among those who answered, 38.0% (159 individuals) had already used a CBD product. Almost two-thirds (60.7%) had not used them, and a small portion (1.3% or 5 individuals) were unsure (Table 6).

Table 6: Responses to the question "Have you ever consumed or used CBD products?"

	Number	Percentage
Yes, I have consumed or used them.	159	38.0
No, I have not consumed or used them.	254	60.7
I don't know	5	1.3
Total	418	100.0

*n=418

Frequency of use. Those who indicated that they had consumed or used CBD products (159 individuals) were then asked about the frequency of their usage. Among them, 15.6% were using a CBD product daily, 10.5% weekly, and 11.6% monthly. The majority (62.3%) stated that they had tried CBD, but are not regular users (Table 7).

Table 7: Responses to the question "How often do you currently consume or use CBD products?"

	Number	Percentage
Daily	25	15.
Weekly	17	10.5
Monthly	18	11.6
I have tried CBD, but I am not a regular user	99	62.3
Total	159	100.0

*n=159

Forms of use. The next question aimed to determine how respondents categorise the CBD product(s) they had consumed or used. The most frequently reported form was topical oil to be applied to the skin (42.8%; 68 responses), followed by CBD oil for ingestion (32.7%; 52 responses) and oral drops (30.8%; 49 responses). The use of creams/lotions and inhalation (vaping) was less common, with

each reported by 13.8% of respondents (22 responses). In the "Other" category, selected by 17.6% (28 responses), the most commonly mentioned products were resin or paste. This suggests that CBD products are most commonly used either topically or orally (Table 8).

Table 8: Responses to the question "How would you categorise the CBD products you have consumed or used?"

Product form	Number	Percentage
Oil (for ingestion)	68	42.8
Oral drops	52	32.7
Creams/lotions	49	30.8
Inhalation (vape)	28	17.6
Capsules/tablets	22	13.8
Oil (for topical use)	22	13.8
Other	16	10.1

*n=159

Perceived determinants of product quality. All 510 respondents were also asked about the extent to which they agree on the importance of various factors in determining the quality of CBD products (on a 7-point scale, 1 - strongly disagree, 7 - strongly agree). While assessing the quality of a product containing CBD, the most important factors are that the product has been approved for sale (average score 5.41) and a recommendation by a health professional (average score 5.40). These are followed by the price (4.75), recommendations by family and friends (4.66), and that the product is made by a well-known manufacturer/brand (4.57). The packaging (3.24) is considered the least important factor (Figure 1).

Figure 1: Agreement with statements about the most important factors in determining the quality of a CBD product
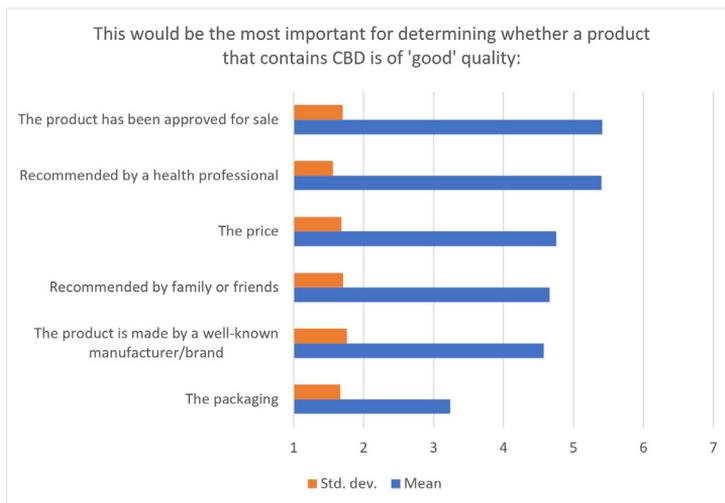
*n=510

Perceived responsibility. All respondents (n = 510) also answered the following question about who is responsible for product quality. The majority of respondents (81.0%) believe the manufacturer holds primary responsibility for ensuring the quality of CBD products. At the same time, 60.6% of participants stress the role of regulatory authorities, while suppliers are considered responsible by 37.1% of respondents. Only 13.9% believe the individual consumer is responsible. The "Other" category (0.8%) included responses such as the pharmacist, retailer, and everyone from the seller to the user (Table 9).

Table 9: Responses to the question "Who do you think is responsible for ensuring that the CBD products we consume are of good quality?"

	Number	Percentage
The manufacturer	413	81.0
The regulatory authority	309	60.6
The retail supplier	189	37.1
The individual user	71	13.9
Other	4	0.8
Total	510	100.0

*n=510

Attitudes to the use of dietary supplements. The next set of three statements measured how respondents view the use of dietary supplements. Agreement was again measured using a 7-point Likert scale. The data indicate that respondents generally have a positive attitude to dietary supplements. The highest average score (4.29) reflects the belief that taking dietary supplements is beneficial. Respondents also agreed that taking them would be to their benefit (4.19). However, they did not agree (on average) with the final statement that taking dietary supplements is important to them (3.70). All three average values were significantly different from the midpoint value (4.0) (Figure 2).

Figure 2: Agreement with statements about attitudes to the use of dietary supplements
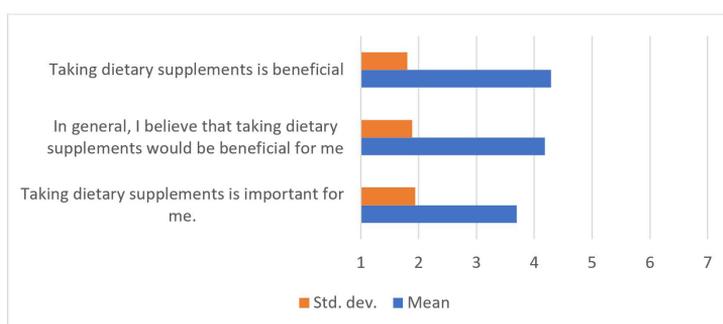
*n=510

Health involvement. Finally, we asked respondents about their general involvement with health (7-point Likert scale), with the data indicating a high level of involvement. The highest average score (6.22) shows that respondents perceive health as very important, which is supported by the statement that health means a lot to them (6.17). They also care a great deal about their health (5.89). A slightly lower, albeit still above-average, score (5.57) was given to valuing healthy eating, suggesting that while this is an important aspect of health it holds somewhat less weight than their overall concern for health. All four average values were significantly different from the midpoint value (4.0) (Figure 3).
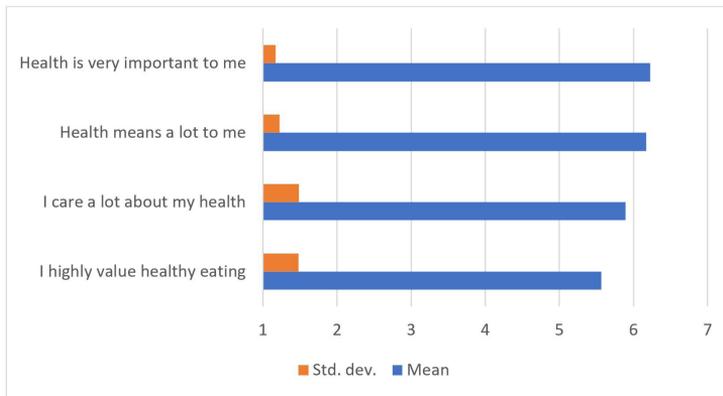
Figure 3: Agreement with statements about health involvement

*n=510

Factors influencing intention to use. The next question aimed to determine the importance of various factors in consumers' consideration of CBD products, rated on a scale from 1 (not at all important) to 7 (extremely important). A total of 254 respondents answered this question. The results show the most important factor while considering CBD products is product quality (average score: 6.31), followed by the presence of certifications on the product (5.95), recommendations by a health professional (5.86), and personal health issues (5.83). This shows the significance of trust and expert guidance. The price (5.33) and the reputation of the company (5.38) play a moderately important role, while the opinions of others (4.53) and information from media sources (4.45) were rated as less important. Standard deviations indicate that respondents were most consistent in rating the importance of product quality (SD = 1.08), whereas the opinions of others (SD = 1.69) showed the greatest variability, suggesting different levels of influence among individuals. All seven factors were rated significantly above the midpoint value of 4.00 on the 1–7 scale, indicating that they all play a role in consumers' thought processes (Figure 4).

Figure 4: Importance of various factors while considering CBD products
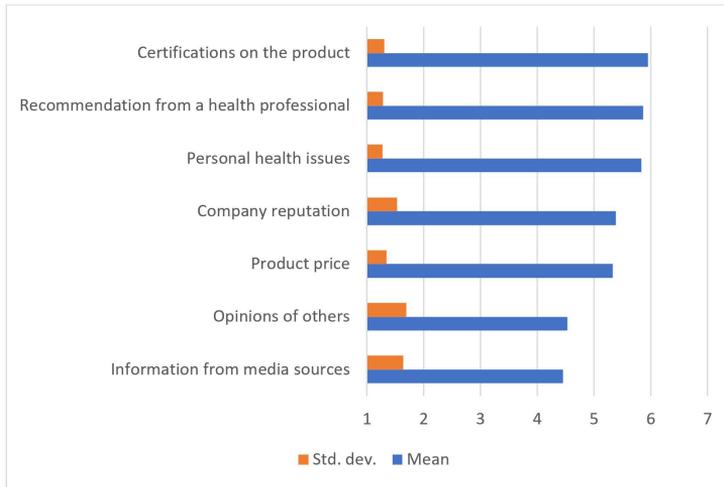
*n=254

Intention to use CBD products. To assess future behavioural intentions, respondents were asked to rate how much they agreed with three statements on a scale from 1 (not at all important) to 7 (extremely important). The statement "I would consider purchasing CBD products in the future" received the highest average score of 4.31. This was followed by "I am interested in ingestible CBD products" with an average of 3.65, and "I intend to use CBD products", which had the lowest average of 3.47. These results indicate that interest in ingesting CBD and intended use are significantly below the midpoint, while considering a purchase is significantly above the scale midpoint (Figure 5).

Figure 5: Agreement with statements on behavioural intention
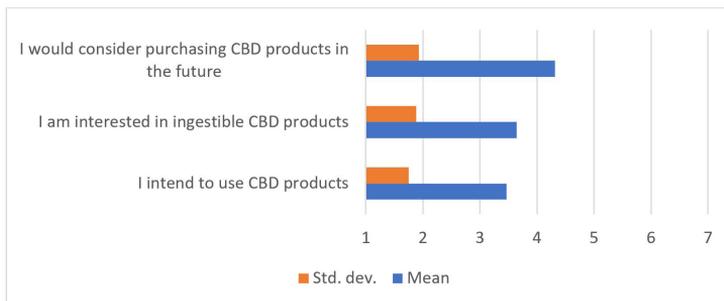
*n=254

4.3.2 Motivation factors

Use by others. The data show the majority of respondents (59.7%) know between 1 and 5 people who use or have used a CBD product; 25.1% of respondents do not know anyone with such experiences. Only a small share (3.7%) know 6 to 10 users, and 1.7% know more than 11 people who use/have used CBD. A few respondents (9.8%) were unsure how many people they know with CBD experience (Table 10).

Table 10: Responses to the question "How many people do you know who use (or have used) CBD products?"

	Number	Percentage
None	64	25.1
1–5	151	59.7
6–10	9	3.7
11 or more	4	1.7
I don't know	25	9.8
Total	254	100.0

*n=254

Attitude to CBD products. Attitudes to CBD products were also assessed using a semantic differential scale, where respondents were presented with seven pairs of adjectives (reflecting different attributes) and asked to indicate on a scale from 1 to 7 which side they leaned toward more. The data reveal varying perceptions of product characteristics. For the pair Accessible–Inaccessible, the average score was 3.56, suggesting that CBD products are generally seen as accessible, although some still perceive them as harder to access. The attribute Well-regulated–Poorly regulated had an average of 4.14, indicating a neutral perception of regulation – neither clearly good nor poor. For Well-researched–Poorly researched, the average was 4.00, again reflecting a neutral perception of how thoroughly CBD products are studied. The pair Effective–Ineffective scored an average of 3.32, showing that products are generally perceived as effective. For Safe–Unsafe, the average score was 3.45, indicating a perception leaning toward safety. The pair Cheap–Expensive had a high average score of 5.46, revealing a strong perception that CBD products are expensive. The Healthy–Unhealthy dimension had a lower average score of 3.18, pointing to a positive perception of CBD products as being healthy. In general, while the overall attitudes are mostly positive, a few dimensions showed mixed or slightly negative perceptions. All average scores, except those related to regulation and research, were statistically significantly different from the neutral midpoint of 4.00 on the 7-point scale (Figure 6).

Figure 6: Attitudes to CBD products
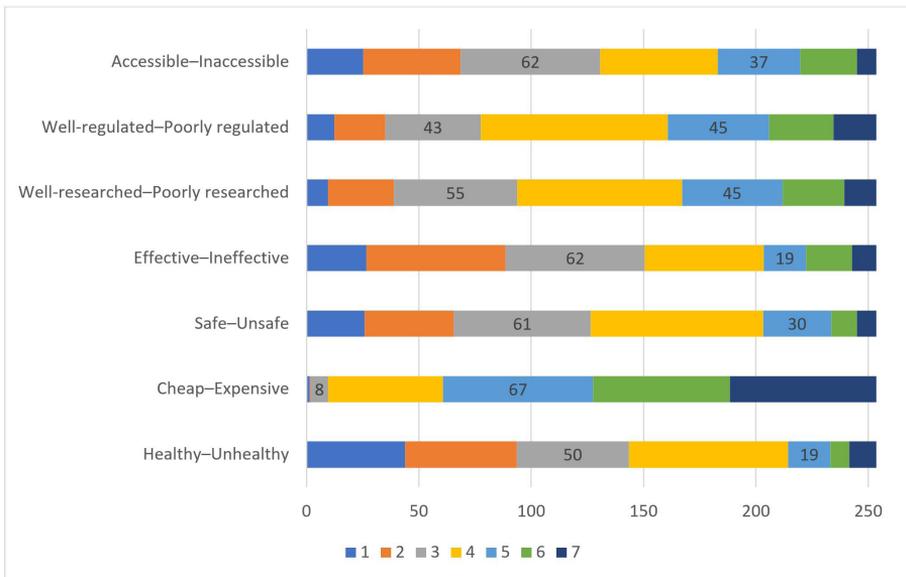
*n=254

Perceived risk. One set of questions focused on assessing the general risk associated with CBD products. Respondents first rated overall risk on a scale from 1 (very low) to 5 (very high), with the average score not differing significantly from the midpoint value of 3.00. They then rated their agreement with four risk-related statements on a 7-point scale. The data show that, on average, respondents did not agree with statements describing various risk aspects. These statements were: "Information about CBD products is hard to understand" (average: 3.55); "Using CBD products has unpleasant side effects" (3.53); "Using CBD products is not convenient" (3.11); and "Using CBD products weakens the natural immune system" (2.93) (Figure 7).

Figure 7: Agreement with statements about the risk of CBD products
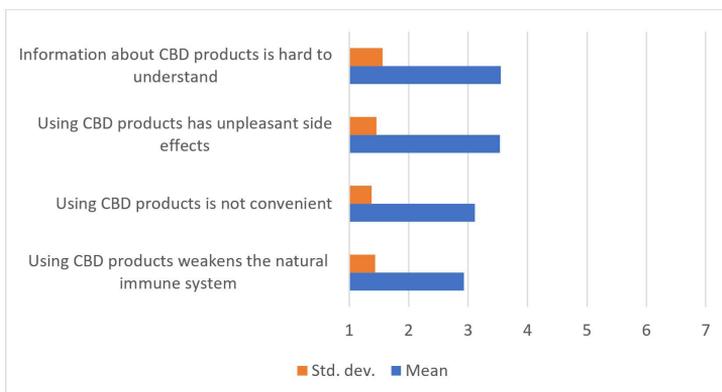
*n=254

Perceived benefits. As a counterbalance to risk, we also measured the perception of benefits. The first question asked respondents to rate the general perceived benefit of CBD products on a 5-point scale from 1 (very low) to 5 (very high). The average rating was 3.56, indicating a generally positive perception. Respondents then rated their agreement with three benefit-related statements on a 7-point scale. The highest average agreement was with the statement "Using CBD products can reduce the risk of health problems" (average: 4.23). This was followed by the statement "Using CBD products improves psychological well-being" with an average of 3.92, which did not differ significantly from the midpoint value of 4.00, indicating a relatively neutral stance. On average, respondents did not agree with the statement "Using CBD products improves physical fitness" (3.53) (Figure 8).

Figure 8: Agreement with statements about the benefits of CBD products
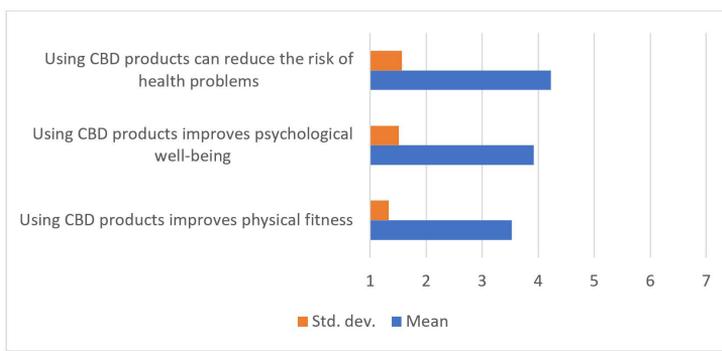
*n=254

Perceived barriers. Respondents who indicated at the start of the survey that they had not heard of CBD (92 individuals) and those who were unsure about their experience (5 individuals) were asked to identify the main reasons explaining why they had not tried a CBD product. The most common reason was a lack of interest or need, mentioned by 55.7% of non-users (54 individuals). The second-most common reason was a lack of information (42.3%). In addition, 17.5% reported a fear of side effects, indicating concerns about safety. Legal concerns, such as doubts about the legality of CBD products, were also cited by 15.5%. Scepticism about effectiveness was another barrier, with 10.3% unsure whether CBD products actually work. A small percentage (4.1%) selected "Other", where they noted unfamiliarity with the products as their reason (Table 11).

Table 11: Responses to the question "What are the main reasons you have not tried CBD products?"

	Number	Percentage
No interest or need	54	55.7
Lack of information	41	42.3
Fear of side effects	17	17.5
Legal concerns (doubts about legality)	15	15.5
Doubts about effectiveness	10	10.3
Other	4	4.1
Total	97	100

*n=97

Influence of social norms on non-use. The 97 respondents who had not tried CBD were also asked how much other people had influenced their decision not to use a CBD product. The results show that most were not influenced by others, with 62.0% (60 out of 97) stating that other people have had no influence on their decision. About 21.9% selected "neutral", indicating a moderate level of influence. A smaller share (14.6%) expressed that others have had very little influence, while only 1.4% reported that other people have strongly influenced their decision.

Consideration of future use. Respondents were also asked in which conditions they might consider trying CBD products in the future. The most important factor was health, with 60.8% saying they would consider trying CBD if they had health problems. Just under half (49.5%) indicated they would consider it if recommended by a healthcare professional, and 34.0% if the products were proven to be more effective. A smaller share (18.6%) would consider using CBD if the prices were lower, indicating that cost remains a barrier for many. Further, 6.2% would consider it if its social acceptance were to increase, and a very small portion (2.1%) cited other reasons not included in the listed categories (Table 12).

Table 12: Responses to the question "In which conditions would you consider trying CBD products in the future?«

	Number	Percentage
If I had health problems	59	60.8
If recommended by a healthcare professional	48	49.5
If they were proven to be more effective	33	34.0
If the prices were lower	18	18.6
If their social acceptance were to increase	6	6.2
Other	2	2.1
Total	97	100

*n=97

4.3.3   Opportunity factors

External cues to action. The next set of data shows how respondents would react to various sources of information that could encourage them to use CBD products, which they rated on a 7-point scale (1 – strongly disagree, 7 – strongly agree). They agreed most strongly that they would be more likely to use CBD products when they are recommended by healthcare professionals (average 4.97). They neither agreed nor disagreed with the statement that they would be more likely to use these products when they are recommended by friends or family (4.06). They disagreed more with the sources expressed in the statements: "when I hear about nutritional information on the Internet/social media" (3.42), "when I read about nutritional information in newspapers or magazines" (3.42) and "when I hear about nutritional information on TV/radio" (3.06) (Figure 9).

Figure 9: Agreement with statements about the influence of external parties
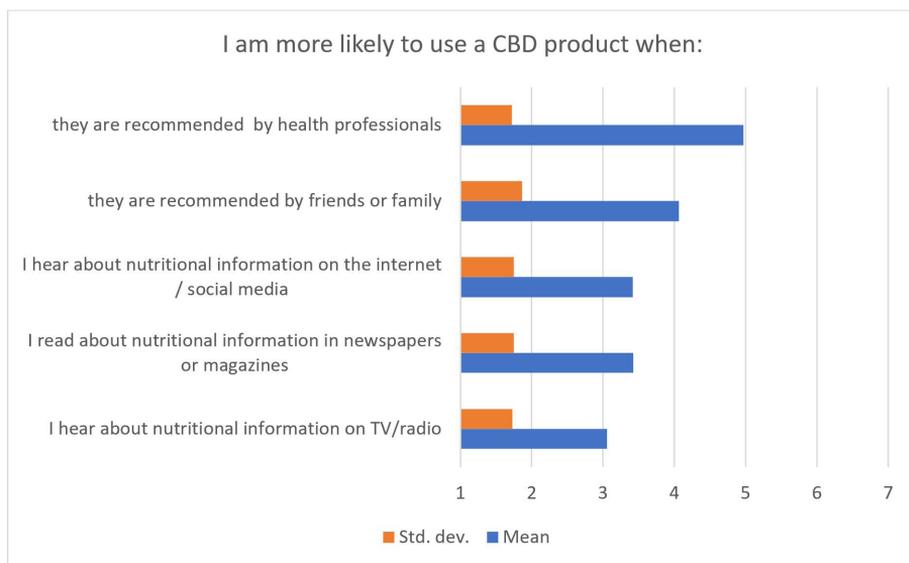
*n=510

Social norms concerning usage. We were also interested in the role of social norms and thus presented respondents with three statements, asking them to rate their level of agreement on a scale from 1 to 7. The data show that, on average, respondents do not feel strong societal pressure to consume CBD products (average 2.82). In contrast, people who are important to the respondents mostly approve of their CBD product use (average 4.70) and believe they should use it (average 4.18). All three average values were significantly different from the midpoint value (4.0) (Figure 10).

Figure 10: Agreement with statements about the influence of social norms on CBD product consumption
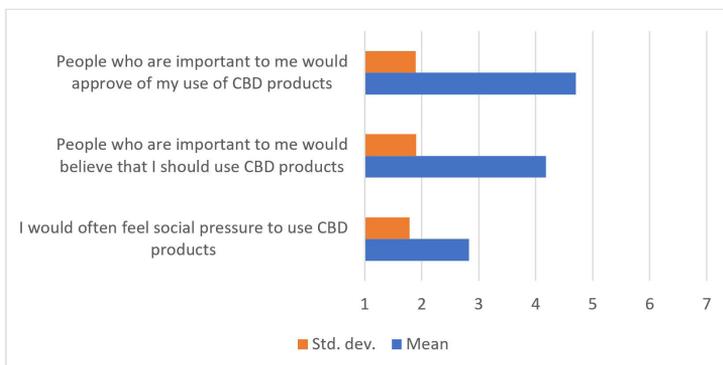
*n=510

Purchase channels used. Respondents were also asked where they usually purchase CBD products. Organic product stores (e.g., Kalček) were the most common source, selected by over half the respondents (53.5%). Online stores were the second-most frequent channel (31.4% of the respondents), followed by supermarkets/discount stores (13.8%). Drugstores (e.g., Sanolabor, dm, Mueller) were used by 10.1%, while pharmacies (e.g., Lekarna Ljubljana) were the least common option, chosen by only 5.7%. The "Other" category was selected by 15.7%, indicating the use of alternative sales channels such as friends or acquaintances (11 respondents) and direct producers (mentioned by 3 respondents). The results suggest that most respondents prefer to purchase CBD products from organic shops or online, while pharmacies, drugstores, and specialised CBD stores play a smaller role (Table 13).

Table 13: Responses to the question "Where do you usually purchase CBD products?"

Type of store	Number	Percentage
An organic product store (e.g., Kalček)	85	53.5
An online store	50	31.4
A supermarket/discount store	22	13.8
A drugstore (e.g., Sanolabor, dm, Mueller)	16	10.1
A pharmacy (e.g., Lekarna Ljubljana)	9	5.7
A specialised CBD/hemp product store	0	0.0
Other	25	15.7

*n=254

4.3.4   Ability factors

Source of information used. Respondents were then asked where they had first heard about CBD. The data show the majority received information from friends, representing 40.8% of all sources. The second-most common source was social media (27.4%), followed by news outlets (19.4%). A

smaller share had learned about CBD from family members (5.5%), health professionals (3.0%), and other sources, which accounted for 3.9%. Under "Other," respondents mentioned sources such as TV, media, the Internet, lectures, education, and the magazine Sanolabor (Table 14).

Table 14: Responses to the question "Where did you first hear about CBD?"

Source of information	Number	Percentage
Friends	104	40.8
Social media	70	27.4
News	49	19.4
Family	14	5.5
Health professional(s)	8	3.0
Other	10	3.9

*n=254

Preferred information sources about CBD products. All respondents (n = 510) answered the question about their preferred way of obtaining information about CBD products. The results show the most frequently selected sources were pharmacists (31.6%) and doctors (29.6%), indicating that participants place the greatest trust in health and medical professionals. The Internet was also a popular information source, chosen by 22.2% of respondents, followed by friends (15.1%). Other sources like the staff at health food stores (13.1%) and the product packaging (10.8%) were also considered important, albeit to a lesser extent. Smaller portions of respondents preferred sources like books (8.4%), dietitians/nutritionists (8.4%), family (8.6%), magazines (6.9%) and coaches/ fitness trainers (3.1%). A few (2.0%) mentioned other sources not covered by the survey (Table 15).

Table 15: Responses to the question "What would be your preferred way of obtaining information about CBD products?"

	Number	Percentage
Pharmacist	161	31.6
Doctor	151	29.6
The Internet	113	22.2
A friend	77	15.1
Health food store staff	67	13.1
Product packaging	55	10.8
Family	44	8.6
Books	43	8.4
Dietitians/Nutritionists	43	8.4
Magazines	35	6.9
Coaches/Fitness trainers	16	3.1
Other	10	2.0
Total	510	100

*n=510

Subjective knowledge. In one section of the survey, respondents were asked to assess how much they know about CBD products (subjective knowledge). They were presented with three statements and asked to rate their level of agreement on a scale from 1 to 7. Respondents did not statistically agree with any of the statements. The lowest level of agreement was with the statement "Among my circle of friends, I am an expert on CBD products" (average score: 1.56). This was followed by "I can accurately judge the quality of a CBD product", with a slightly higher average of 1.93. The highest agreement was with the statement "I know quite a lot about CBD products", which had an average score of 2.52. Interestingly, just a handful of respondents agreed with these statements (between 6 and 24 individuals, depending on the statement) (Figure 11).

Figure 11: Agreement with statements about subjective knowledge of CBD products
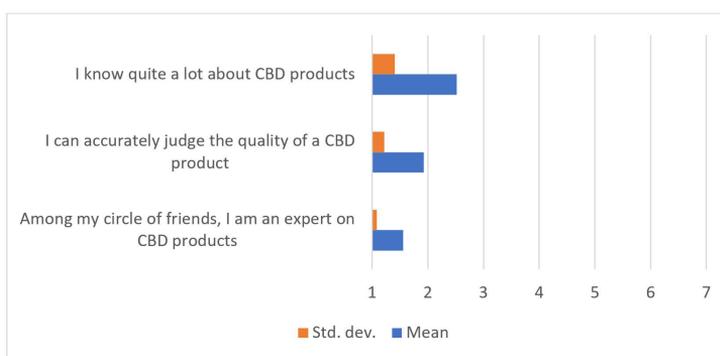
*n=254

Objective knowledge. Alongside subjective knowledge, we measured objective knowledge using three statements, which respondents had to evaluate as true/false. The first statement "CBD is a psychoactive compound found in cannabis" is false, yet 72.8% of respondents believed it to be true, while only 27.2% correctly identified it as false. The second statement ("In Slovenia, CBD products can be sold as dietary supplements") is true, and 62.4% correctly identified it as such, while 37.6% believed it to be false. For the third statement: "Today, CBD products can be legally purchased in Slovenia without any restrictions", responses were almost evenly split: 53.9% said it was true, and 46.1% that it was false. This suggests a level of confusion regarding the legal framework because CBD product sales in Slovenia are still restricted by the THC content limit (up to 0.2%) (Figure 12).

Figure 12: Agreement with statements about objective knowledge of CBD products (in %)
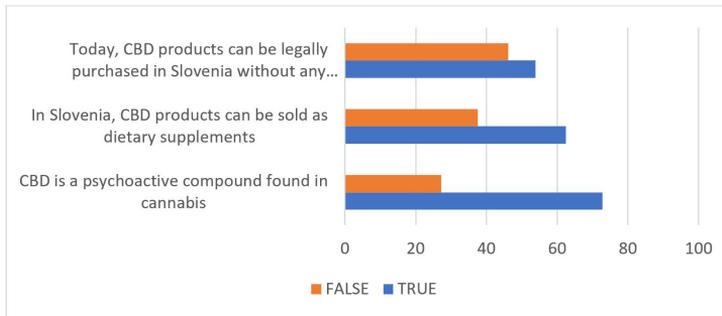
*n=254

4.3.5 Relationships between the variables

To gain further insight into the relationships between variables, we first carefully selected them. Grounded in the Motivation, Opportunity, and Ability (MOA) framework, we include perceived benefits, perceived risk, and attitude to CBD as motivation variables that capture approach–avoidance evaluations driving intention; social norms as the opportunity variable reflecting external social enablement or inhibition; and subjective knowledge as the ability variable indicating consumers' confidence to process CBD information and act on it. To distinguish CBD-specific drivers from broader wellness predispositions, we further add health involvement and attitude to dietary supplements as domain-general controls. This selection reflects the study's MOA-based conceptual model and empirical patterns of relationships with intention. Although a larger set of variables within MOA was presented earlier (Table 3), we only included variables that were adequately measured with appropriate scales and collected from the same respondents.

We first conducted correlation analysis to identify statistically significant associations between selected variables. For these variables, we calculated the average of each set of statements, leading to the following constructs: subjective knowledge, perceived benefits, perceived risk, negative attitude to CBD products, health involvement, attitude to the use of dietary supplements, social norms, and intention to use CBD products. For each construct, the items listed in the previous section were considered, except for Social norms where the first two items were taken into account (in order to achieve a satisfactory Cronbach alpha). Cronbach's alpha coefficients for these constructs ranged from 0.71 to 0.93.

The correlation analysis shows that the intention to use CBD products is positively related to subjective knowledge, perceived benefits, attitudes to supplements, and social norms. In contrast, there is a negative correlation with perceived risk and a negative attitude to CBD products. Health involvement does not seem to be significantly correlated with intention (Table 16).

Table 16: Correlations between selected variables

	Cronbach alpha	Subj. knowl.	Perc. benefits	Perc. risk	Attitude CBD	Health involv.	Attitude Suppl.	Soc. norms	Intention
Subjective knowledge	0.80	1							
Perceived benefits	0.79	0.207**	1						
Perceived risk	0.79	-0.256**	-0.423**	1					
Attitude to CBD	0.76	-0.275**	-0.493**	0.600**	1				
Health involv.	0.87	0.121	0.023	0.050	-0.034	1			
Attitude to dietary supplements	0.93	0.265**	0.410**	-0.330**	-0.336**	0.333**	1		
Social norms	0.71	0.231**	0.467**	-0.452**	-0.435**	0.253**	0.499**	1	
Intention to use CBD products	0.92	0.302**	0.556**	-0.323**	-0.312**	00.121	0.447**	0.463**	1

** Correlation is significant at the 0.01 level (2-tailed)

In the next step, we examined how selected variables influence the intention to use CBD products. More specifically, we looked at the influence of subjective knowledge, perceived benefits, perceived risk, a negative attitude to CBD products, social norms, health involvement, and attitude to the use of dietary supplements on intention. Perceived benefits, perceived risk, and attitude to the use of CBD are considered to be motivations, while subjective knowledge is an ability and social norms an opportunity. Health involvement and attitude to dietary supplements are general variables. In addition to these variables, behavioural intention can be influenced by demographic variables (age and gender), which were also included in the analysis as control variables (Figure 13).

Figure 13: Conceptual model for regression analysis
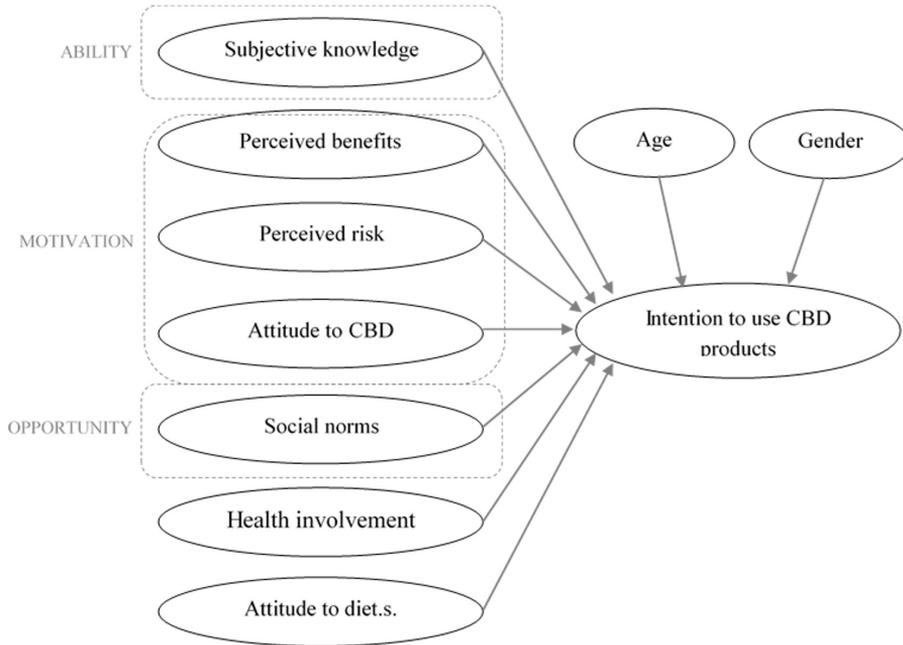
Using a simultaneous entry method (enter method), a multiple regression was run to predict the intention to use CBD products from all nine predictors: subjective knowledge, perceived benefits, perceived risk, negative attitude to CBD products, social norms, health involvement, attitude to the use of dietary supplements, gender, and age. The model was significant, $F_{(9, 244)} = 22.135$, $p < .001$, explaining 43.0% of the variance ($R^2 = 0.450$; adjusted $R^2 = 0.430$; SE = 1.297). Variance inflation factors (VIFs) and Tolerance indicated no multicollinearity concerns (VIF range = 1.037–1.828; Tolerance range = 0.547–0.964; all VIFs < 2).

The results show that the variables Perceived benefits ($\beta = 0.366$, $p = 0.000$), Social norms ($\beta = 0.167$, $p = 0.007$), Subjective knowledge ($\beta = 0.140$, $p = 0.006$) and Attitude to the use of dietary supplements ($\beta = 0.191$, $p = 0.001$) are statistically significant predictors of intention to use CBD products. This indicates that greater perceived benefits, stronger social norms, higher self-assessed knowledge, and more favourable attitudes to supplements are all associated with increased intention. In contrast, the variables Perceived risk ($\beta = -0.041$, $p = 0.518$), Attitude to the use of CBD products ($\beta = 0.054$, $p = 0.404$), and Health involvement ($\beta = -0.003$, $p = 0.958$) were not statistically significant, suggesting that they do not meaningfully influence intention in this model. Further, the control variables Gender ($\beta = 0.141$, $p = 0.004$) and Age ($\beta = 0.017$, $p = 0.011$) also emerged as significant predictors, implying that demographic factors may play a role in shaping behavioural intention (Table 17).

Table 17: Regression coefficients for intention, subjective knowledge, benefits, risk, attitudes, and social norms

Model	Unstandardised Coefficients		Standardised Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	-1.884	0.835		-2.257	0.025
Subjective knowledge	0.229	0.083	0.140	2.759	0.006
Perceived benefits	0.592	0.097	0.366	6.093	0.000
Perceived risk	-0.069	0.107	-0.041	-0.647	0.518
Attitude to CBD products	0.097	0.116	0.054	0.837	0.404
Social norms	0.166	0.061	0.167	2.728	0.007
Health involvement	-0.004	0.077	-0.003	-0.053	0.958
Attitude to dietary supplements	0.193	0.059	0.191	3.292	0.001
Gender	0.483	0.166	0.141	2.905	0.004
Age	0.017	0.006	0.128	2.555	0.011

Dependent Variable: Intention to use CBD products

To provide a more nuanced insight into the role played by individual attitude dimensions, another regression analysis was conducted. Seven variables forming the Attitude to the use of CBD products were tested as independent variables using regression analysis (Enter method). These variables are: Healthy–Unhealthy, Cheap–Expensive, Safe–Unsafe, Effective–Ineffective, Well-researched–Poorly researched, Well-regulated–Poorly regulated, Accessible–Inaccessible. In addition, age and gender were also used as predictors. The model was significant, $F_{(9, 244)} = 12.200$, $p < .001$, explaining 28.7% of the variance (R = 0.557, R^2 = .311, adjusted R^2 = 0.285; SE = 1.452). Variance inflation factors indicated no multicollinearity concerns (VIF range = 1.005–2.357; Tolerance = 0.424–0.995; max condition index = 22.869 < 30).

The regression model is statistically significant, indicating that the predictor variables significantly contribute to explaining the variance. The results show the following characteristics are significant predictors of intention: Healthy (β = -0.287, p < 0.001), Well-researched (β = -0.262, p = 0.004), and Accessible (β = 0.201, p = 0.001), while the other four variables are not significant. Gender as a control variable was also a significant predictor of intention (β = 0.769, p < 0.001) (Table 18).

Table 18: Regression coefficients for intention and attitude dimensions concerning CBD products

Model	Unstandardised Coefficients		Standardised Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	2.930	0.604		4.850	0.000
Healthy–Unhealthy	-0.287	0.073	-0.264	-3.919	0.000
Cheap–Expensive	0.135	0.079	0.096	1.706	0.089
Safe–Unsafe	-0.148	0.097	-0.125	-1.529	0.128
Effective–Ineffective	-0.035	0.082	-0.032	-0.428	0.669
Well-researched–Poorly researched	-0.262	0.090	-0.223	-2.905	0.004
Well-regulated–Poorly regulated	0.070	0.079	0.061	0.882	0.379
Accessible– Inaccessible	0.201	0.060	0.185	3.363	0.001
Gender	0.769	0.183	0.224	4.197	0.000
Age	0.013	0.007	0.104	1.858	0.064

Dependent Variable: Intention to use CBD products

5 DISCUSSION AND CONCLUSION

5.1 GENERAL DISCUSSION OF THE FINDINGS

The two-method approach adopted in this study provides a rich opportunity to integrate the findings with the broader academic discourse. Application of the MOA framework (MacInnis and Jaworski, 1989) not only helped to systematise the factors that influence the consumption of CBD products, but also revealed several areas where the experiences and perceptions of Slovenian consumers both align with and diverge from existing international findings.

Highlighting the first dimension of the MOA framework – **motivation**, both the qualitative narratives and the survey data strongly reflect health-related motives (particularly stress reduction, pain management, improved sleep) as the main reasons for using CBD. This confirms the findings of Goodman et al. (2022), Corroon and Phillips (2018) and the Food Standards Agency (2019), who all reported that therapeutic benefits outweigh recreational or curiosity motives for most consumer groups.

However, the qualitative data reveal further nuances: some participants referred to the impact of the health status of family members or acquaintances as a trigger for exploring CBD, pointing to the social context of these health motivations. This mirrors the findings of Wysota et al. (2022b) who show that indirect health experiences are strong motivators, especially in collectivist or relational cultures.

What is particularly novel in this study is the extent of conditional motivation that was observed. Many respondents indicated that they would consider using CBD only if it were prescribed by a doctor or if scientific evidence supported it. This conditionality lends a more cautious tone to motivations, which contrasts with the more liberal CBD adoption patterns in North America (Choi and Hwang, 2023), suggesting culturally specific hesitancy based on both trust in institutional authorities and less familiarity with CBD.

Moreover, the quantitative analysis confirmed that, of the three motivation factors tested in the regression analysis, only perceived benefits was a significant predictor of behavioural intention, while the impact of perceived risk and attitude to the use of CBD products was not sufficiently strong. Research consistently establishes that perceived benefits, such as pain relief and stress reduction, are the primary drivers of intention to use CBD products. These benefits are highly salient and widely promoted, leading users and potential users to focus on positive outcomes while considering CBD use (Wysota et al., 2022; Geppert et al., 2023; Choi and Hwang, 2023). In contrast, perceived risks are often rated as low or very low, especially among users, and are unlikely to deter intention unless the risks are made highly salient or personally relevant (Geppert et al., 2023; Wysota et al., 2022). General attitudes to CBD, such as the belief that "natural is good", are often positive but may not be strong enough to drive intention unless linked to specific, personally relevant benefits. Intention to use is more closely tied to concrete expected outcomes than to abstract attitudes (Wysota et al., 2022; Choi and Hwang, 2023; Bhamra et al., 2021).

In terms of **opportunities** as the second component of the MOA model, existing literature emphasises how legal and regulatory clarity promotes the acceptance of CBD (Prohibition Partners, 2023). This study corroborates these findings. Qualitative respondents cited legal uncertainty and the lack of clear institutional support as key barriers. In particular, participants spoke about difficulties in understanding what is legal, what is safe and what is officially recommended, which is in harmony with findings for the USA by Wysota et al. (2022a) on the confusing legal status of CBD.

While product availability appears to be relatively high in Slovenia (such as in pharmacies, wellness shops, and online), the qualitative results show the perceived legitimacy of the purchasing environment plays an important role. Participants expressed greater trust in CBD sold in pharmacies or through doctors than in wellness shops or petrol stations. Social norms also proved to be an important promoting or inhibiting factor. Although global trends indicate the general destigmatising of cannabis (Saad, 2023), Slovenian informants indicated that, especially older people, still associate CBD with drug use, intoxication or addiction. Further, the qualitative findings clearly showed that visual and symbolic cues (such as branding with a cannabis leaf) perpetuate stigma and detract from the wellness potential of CBD.

The quantitative results reveal that external influences and social context have a critical role in shaping consumers' openness to using CBD products. Among various cues, healthcare professionals emerged as the most trusted source of encouragement, while social media, traditional media and online platforms were viewed with stronger scepticism. This supports prior research suggesting that credibility and expertise are vital when consumers are evaluating novel or health-related products (Nguyen et al., 2023; Goodman et al., 2022). Social norms proved to have a mixed impact. While there is little pressure from broader society to use CBD, approval from close social contacts, such as friends and family, influences perceptions and intentions. This aligns with findings that peer support can provide support critical for sustained behaviour change in health management, rather than relying on generalised societal norms (Boothroyd and Fisher, 2010). Moreover, US support for cannabis legalisation reached relatively high levels in 2023, which is likely normalising CBD elsewhere around the world. Our results for Slovenia show low perceived societal pressure to use, even though close others tend to approve of such use. This softer normative push may help explain Slovenia's cautious intent despite the high level of awareness.

In terms of purchasing behaviour, most consumers prefer to buy CBD from organic product stores or online retailers rather than pharmacies or drugstores. This reflects the continuing association of CBD with alternative health and wellness contexts, and may also indicate limited access or endorsement from formal health institutions. In comparison, US consumers buy frequently from dispensaries, online stores, and pharmacies, reflecting a more mature dispensary ecosystem.

With regard to the third MOA dimension – **ability**, the literature clearly shows that knowledge and prior experience in particular play a central role in CBD adoption (Choi and Hwang, 2023; Geppert et al., 2023). The presented study supports this, with the quantitative data demonstrating

a strong relationship between subjective knowledge and behavioural intention. However, a crucial difference was also uncovered: subjective knowledge was often overestimated, while objective knowledge remained low.

The mentioned discrepancy is consistent with earlier observations in the dietary supplement and wellness market (Zhu, 2016), where consumers show trust despite low factual knowledge. Our qualitative data show that participants relied on social networks, anecdotal evidence and social media, echoing Nguyen et al. (2023) who found that over 35% of CBD users turn to informal online sources first for information.

Interestingly, participants in the qualitative study who held previous experience showed more accurate knowledge and lower perceived risk, confirming the view in the literature that repeated use increases self-efficacy. Conversely, non-users reported high levels of uncertainty, limited confidence and concerns about misuse – particularly with respect to dosage and legality. This supports the idea that initial exposure (through low-barrier, trusted channels) may be crucial for changing the perceptions held by sceptical groups.

Support for cannabis legalisation in the USA reached approximately 70% in 2023, which is likely normalising CBD elsewhere around the world. Our results for Slovenia show low perceived societal pressure to use, even though close others tend to approve. This softer normative push may help explain Slovenia's cautious intent despite the high awareness.

Finally, the ability to interpret and apply information proved to be one of the biggest hurdles. Qualitative data showed that people felt overwhelmed or uncertain in the face of conflicting information. Participants wanted clear, understandable explanations, preferably from trusted professionals. This underlines the importance of cognitive accessibility, an aspect often overlooked in studies that focus solely on the availability of information.

With respect to other, non-MOA aspects of the analysis, we found that the majority of our sample had heard of CBD (Slovenia), and less than half of those aware reported having used it (approximately one-third of the total sample). By comparison, European figures vary: country surveys report about 10%–11% of lifetime use (France, Germany), while a cross-country poll established that about 24% had used CBD in the past year in selected European markets (Statista, 2022). Recent US estimates are higher (mid-20s percent) (Cross River Therapy, 2025). Together, this places Slovenia roughly between conservative EU country snapshots and the uptake in the USA.

Most importantly, this study contributes to the literature by applying the MOA framework holistically to the CBD context in a Central European market, a region underrepresented in CBD research. While previous studies tended to isolate motivation-, opportunity- or ability-based influences, this study provides a comprehensive system view of the ways these elements interact.

5.2 PRACTICAL IMPLICATIONS FOR COMPANIES AND PUBLIC POLICYMAKERS

The findings of this study suggest that companies operating in the CBD market should prioritise trust-building measures, especially in markets like Slovenia where legal ambiguity and stigma persist. Product transparency is crucial: companies should provide clear labelling, third-party test results, and information about the CBD concentration, source and extraction method because these elements add significantly to consumer trust and purchase intention (Choi and Hwang, 2023). Given the gap between subjective and objective knowledge, companies should invest in consumer education by way of blogs, pharmacist-led workshops, explainer videos, and credible online content tailored to prospective, new and returning users. Marketing strategies should move away from cannabis tropes, such as a marijuana leaf or psychedelic/'hippie' imagery, that may reinforce negative stereotypes, especially among older adults, and instead align with wellness-oriented, evidence-based narratives (Wysota et al., 2022a). In addition, segmenting products and messages for different consumer profiles, such as offering low-dose entry-level products for cautious users or high-quality therapeutic oils for the treatment of chronic conditions, can increase market integration and long-term brand loyalty.

For policymakers, the study draws attention to the urgent need to clarify the legal status of CBD products and create a uniform legal framework across the EU. The participants repeatedly mentioned the lack of legal clarity as a barrier to use, causing confusion and deterring potential consumers despite strong motivation and positive attitudes. Public institutions should make sure CBD products are classified and regulated similarly to other dietary supplements by mandating quality controls, labelling standards, and maximum THC levels. At the same time, public health campaigns should focus on correcting misconceptions about psychoactiveness, addiction risk, and legality, especially among older populations and first-time users. These efforts should be accompanied by accessible, science-based education disseminated via healthcare professionals, pharmacists, and trusted media representatives; namely, actors who were consistently rated by respondents as more credible than influencers or online advertisements (Nguyen et al., 2023). Finally, funding for longitudinal studies and clinical research on the efficacy of CBD for specific conditions would provide the scientific foundation needed to strengthen both health guidelines and consumer confidence, and ultimately support the safer and more informed integration of CBD into everyday health routines.

5.3 LIMITATIONS AND DIRECTIONS FOR FUTURE RESEARCH

While this study offers valuable insights into how consumers view CBD products through the lens of the MOA framework, several limitations should be acknowledged. First, the study is based on a Slovenian sample, which may limit the ability to generalise the findings to other cultural or regulatory contexts. Perceptions of CBD are influenced by national legislation, cultural attitudes regarding cannabis, and healthcare systems, all of which vary from country to country. Future studies should consider comparative analyses of different European or global markets to determine how contextual differences influence consumer behaviour.

Second, although the study combined both qualitative and quantitative methods, the self-report nature of the data may introduce bias due to social desirability or recall, especially for a topic still associated with stigma. In addition, the cross-sectional design limits our ability to draw causal conclusions about the relationships between motivations, opportunities, abilities, and behavioural intentions. Future research could employ longitudinal designs to observe how changes in regulation, media portrayal, or personal experiences influence CBD consumption over time. Experimental studies could also test the effectiveness of different communication strategies or purchasing environments in shaping consumer attitudes and behaviours. Studying particular populations, such as older adults, medical users or those with chronic conditions, could also provide tailored insights for public health and commercial strategies.

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APPENDICES

Appendix 1: Interview and focus group guide

[INTRODUCTORY REMARKS]

Hello!

First of all, thank you for your willingness to participate in today's discussion.

To start off, before we dive into today's topic, I'd like to ask a few general questions just to warm up and get to know each other a bit.

I'd like to ask each of you to briefly introduce yourself (approximately 30 seconds to 1 minute):

Please tell us your name, age, what you do for a living etc.

Thank you. Now, let's move on to today's topic: the perception of CBD.

1. UNDERSTANDING CBD

In the first part of our discussion, we'll touch on the general understanding of the term CBD.

Are you familiar with the term "CBD" (cannabidiol)?

How would you explain it?

Do you know of any products that contain CBD? (e.g., drops, pastes, oils, creams, foods)

2. PERCEPTIONS, ATTITUDES AND MOTIVATION

How do you perceive products that contain CBD? What is your attitude to these products?

Do you have any personal beliefs or opinions about CBD that you would like to share? Any preconceptions?

What were the main reasons for using CBD products?

What were your expectations regarding their effectiveness? (especially in the case of drops etc.)

Were there any specific health-related reasons or other factors that prompted you to use CBD products?

3. CONCERNS AND RISKS

Do you have any experience with CBD products?

If YES, which ones? What are your experiences?

Which concerns or perceived risks do you associate with the use of CBD products? (e.g., the cost, availability, stigma, legal concerns)

Let's discuss your perceptions of the health risks and benefits associated with CBD dietary supplements.

Please share any concerns you might have about possible side effects or long-term health impacts.

What are some of the perceived obstacles or challenges that might prevent individuals from using CBD products?

Have you personally ever had a negative experience with a CBD product?

If YES, what kind? Please describe.

Have you ever heard of any friends or acquaintances who had a bad experience with a CBD product?

If YES, what kind? Please describe.

Do you ever have concerns about the legality of using CBD? How familiar are you with the regulations governing dietary supplements?

4. USAGE PATTERNS

This question is for those who have already used a CBD product:

Which CBD products do you use? How often do you use them, and how do you dose them?

Have you changed your usage habits over time?

If YES, how?

How do you usually consume these products? (e.g., oral ingestion, topical application)

5. PURCHASING BEHAVIOUR

For those who have searched for or purchased a CBD product:

Now let's talk about the process of purchasing CBD products.

Which factors influence your decision to purchase CBD products? (personal/social/brand factors; e.g., medical condition, price, brand reputation, product reviews etc.)

Where do you most often/prefer to buy CBD products? (e.g., online stores, retail stores, specialty shops)

Where do you usually find information about CBD products? (e.g., online sources, healthcare providers, friends/family, support groups with similar issues)

Which sources do you consider more or less credible when it comes to information about CBD products?

In your opinion, what role does social influence (e.g., peer recommendations, social media trends) play in shaping perceptions and behaviour regarding CBD products?

6. FUTURE INTENTIONS

Now let's look into the future, say 1 year or 5 years from now. What do you think your behaviour with respect to CBD products will be like then?

Which factors could influence changes in your CBD consumption habits? (changes in regulations or product availability)

Finally, two more questions:

Have you noticed any trends in society regarding attitudes or behaviours toward CBD products?

And: if you imagine an ideal situation, what are your wishes concerning CBD products, brands, and purchasing channels?

Would you like to add anything else about this topic before we finish?

Otherwise, we thank you for your time and participation.

Appendix 2: CBD Perception Survey

1. Have you heard of CBD (cannabidiol)?

   1. Yes, I have heard of it.
   2. No, I have not heard of it → SKIP TO QUESTION 17

CBD (cannabidiol) is a non-controlled cannabinoid found in hemp plant extracts, and is known for its potential therapeutic properties. CBD products are not licensed medications and are available for purchase online or in stores.

2. Have you ever consumed or used CBD products?

   1. Yes, I have consumed or used them.
   2. No, I have not consumed or used them → SKIP TO QUESTION 6
   3. I don't know → SKIP TO QUESTION 17

3. How often do you currently consume or use CBD products?

   1. Daily
   2. Weekly
   3. Monthly
   4. I have tried CBD, but I am not a regular user

4. Which types of CBD products have you consumed or used? (Multiple answers possible.)

   1. Capsules/Tablets
   2. Creams/Lotions
   3. Oral Drops
   4. Oil (for consumption)
   5. Oil (for topical use)
   6. Inhalation (vape)
   7. Other (please specify):

5. Where do you usually purchase CBD products? (Multiple answers possible.)

   1. An online store
   2. A drugstore (e.g., Sanolabor, dm, Mueller)
   3. A pharmacy (e.g., Lekarna Ljubljana)
   4. A supermarket/Discount store
   5. An organic products store (e.g., Kalček)
   6. A specialty store for CBD or hemp products

7. Other (please specify):

6. **(SKIP TO THIS QUESTION IF RESPONSE TO #2 WAS "No, I have not consumed or used them.")**

Please rate how important the following factors are while considering CBD products:
1 = Not at all important, 7 = Extremely important

1. Reputation of the company
2. Product certifications
3. The opinions of others
4. Recommendation by a healthcare professional
5. Information from the media
6. The quality of the product
7. The price of the product
8. Personal health issues

7. Please rate your level of agreement with the following statements on a scale from 1 = Strongly disagree to 7 = Strongly agree.

1. I would consider purchasing CBD products in the future.
2. I intend to use CBD products.
3. I am interested in CBD products for consumption.

8. Where did you first hear about CBD?

1. Family
2. Friends
3. Healthcare professional(s)
4. News
5. Social media
6. Other (please specify):

9. Please rate your level of agreement with the following statements on a scale from 1 = Strongly disagree to 7 = Strongly agree.

1. I know quite a lot about CBD products.
2. Among my friends, I am an 'experts' on CBD products.
3. I am good at evaluating the quality of CBD products.

10. Please evaluate whether the following statements are true or false:

    1. CBD is a psychoactive compound found in hemp.
    2. In Slovenia, CBD products can be sold as dietary supplements.
    3. Today, CBD products can be legally purchased in Slovenia without restrictions.

11. How many people do you know who use (or have used) CBD products?

    1. None
    2. 1–5
    3. 6–10
    4. 11 or more
    5. I don't know

12. Please read the following pairs of opposite terms and select the point on the scale that best represents your opinion about CBD products. Here, 1 means you completely agree with the word on the left (the first term), and 7 means you completely agree with the word on the right (the second term).

    In my opinion, CBD products are:

    1. Healthy   1 2 3 4 5 6 7   Unhealthy
    2. Cheap   1 2 3 4 5 6 7   Expensive
    3. Safe   1 2 3 4 5 6 7   Unsafe
    4. Effective   1 2 3 4 5 6 7   Ineffective
    5. Well-researched   1 2 3 4 5 6 7   Poorly researched
    6. Well-regulated   1 2 3 4 5 6 7   Poorly regulated
    7. Easily accessible   1 2 3 4 5 6 7   Hard to access

13. How would you rate the overall risk of CBD products?

    1. Very low
    2. Low
    3. Neutral
    4. High
    5. Very high
    6. I don't know

14. Please rate your level of agreement with the following statements on a scale from 1 = Strongly disagree to 7 = Strongly agree.

    1. Information about CBD products is difficult to understand.
    2. Using CBD products is inconvenient.
    3. Using CBD products has unpleasant side effects.
    4. Using CBD products weakens the natural immune system.

15. How would you rate the overall benefits of CBD products?

    1. Very low
    2. Low
    3. Neutral
    4. High
    5. Very high
    6. I don't know

16. Please rate your level of agreement with the following statements on a scale from 1 = Strongly disagree to 7 = Strongly agree.

    1. Using CBD products can reduce the risk of health problems.
    2. Using CBD products improves physical fitness.
    3. Using CBD products improves psychological well-being.

17. **(SKIP TO THIS QUESTION IF RESPONSE TO #1 WAS "No, I have not heard of it" OR RESPONSE TO #2 WAS "I don't know.")**

    What are the main reasons you have not tried CBD products? (Multiple answers possible.)

    1. Doubts about their effectiveness
    2. Fear of side effects
    3. Legal concerns (uncertainty about their legality)
    4. Lack of information
    5. No interest or need
    6. Other (please specify): _____

18. To what extent do other people influence your decision not to use CBD?

    1. Very strongly
    2. Strongly
    3. Neutral

4. Slightly

5. Not at all

19. In which conditions would you consider trying CBD products in the future? (Multiple answers possible.)

   1. If recommended by a healthcare professional

   2. If proven to be more effective

   3. If the prices were lower

   4. If social acceptance were to increase

   5. If I were to experience a health issue

   6. Other (please specify): _____

20. What would be your preferred source of information about CBD products?

   1. The Internet

   2. Product packaging

   3. A book

   4. A friend

   5. A pharmacist

   6. A dietitian/nutritionist

   7. Family

   8. Magazines

   9. Staff at a health food store

   10. A doctor

   11. A coach/personal trainer

   12. Other: _____

21. Please rate your level of agreement with the following statements on a scale from 1 = Strongly disagree to 7 = Strongly agree.

I would be more likely to use CBD products:

   1. when reminded by friends or family

   2. when hearing about nutrition information on TV/radio

   3. when reminded by a healthcare professional

   4. when reading about nutrition information in newspapers or magazines

   5. when hearing about nutrition information on the Internet/social media.

22. Please rate your level of agreement with the following factors on a scale from 1 = Strongly disagree to 7 = Strongly agree.

    The following would be most important in determining whether a CBD product is 'high quality':

    1. The product is made by a well-known manufacturer/brand
    2. The product has been approved for sale (license for sale)
    3. The packaging
    4. The price
    5. Recommended by family or a friend
    6. Recommended by a healthcare professional

23. In your opinion, who is responsible for ensuring that the CBD products we consume are of 'good' quality? (Multiple answers possible.)

    1. The person who uses them
    2. The manufacturer
    3. The retail supplier
    4. The regulatory authority
    5. Other (please specify): _____

24. Please rate your level of agreement with the following statements on a scale from 1 = Strongly disagree to 7 = Strongly agree.

    1. People who are important to me would approve of my use of CBD products.
    2. People who are important to me would believe that I should use CBD products.
    3. I would often feel social pressure to consume CBD products.

25. Please rate your level of agreement with the following statements on a scale from 1 = Strongly disagree to 7 = Strongly agree.

    1. Taking dietary supplements is important for me.
    2. It is beneficial to take dietary supplements.
    3. Overall, I believe that taking dietary supplements would be good for me.

26. Please rate your level of agreement with the following statements on a scale from 1 = Strongly disagree to 7 = Strongly agree.

    1. Health is very important to me.
    2. I care a lot about my health.
    3. Health means a lot to me.
    4. I highly value healthy nutrition.

Appendix 3: Sources for measurement scales

Table 19: Sources for construct measurement scales

Category	Concepts
Awareness and usage	**Awareness** (Geppert et al., 2023) Have you heard of CBD (cannabidiol)?
	Use of CBD products (Geppert et al., 2023) Have you ever consumed or used CBD products? Yes, I have consumed or used them. No, I have not consumed or used them. I don't know
	Frequency of use (Bhamra et al., 2021; Geppert et al., 2023) How often do you currently consume or use CBD products? Daily Weekly Monthly I have tried CBD, but I am not a regular user
	Forms of use (Geppert et al., 2023) How would you categorise the CBD products you have consumed or used? Oil (for ingestion) Oral drops Creams/lotions Inhalation (vape) Capsules/tablets Oil (for topical use) Other
	Perceived determinants of product quality (Bhamra et al., 2021) This would be the most important for determining whether a product that contains CBD is of 'good' quality: The packaging The product is made by a well-known manufacturer/brand. Recommended by family or friends The price Recommended by a health professional The product has been approved for sale
	Perceived responsibility (Bhamra et al., 2021) Who do you think is responsible for ensuring that the CBD products we consume are of good quality? The manufacturer The regulatory authority The retail supplier The individual user Other
	Attitudes to the use of dietary supplements (Noor et al., 2014) It is important to me to take dietary supplements. In general, I believe that taking dietary supplements would be beneficial for me. Taking dietary supplements is beneficial.

	Health involvement (Altintzogou and Heide, 2023) I highly value healthy eating. I care a lot about my health. Health means a lot to me. Health is very important to me.
	Factors influencing intention to use (Choi and Hwang, 2023) Information from media sources The opinions of others The price of the product Company reputation Personal health issues Recommendation by a health professional Certifications on the product The quality of the product
	Intention to use CBD products (Choi and Hwang, 2023) I intend to use CBD products. I am interested in ingestible CBD products. I would consider purchasing CBD products in the future.
Motivation factors	**Use by others** (Bhamra et al., 2021) How many people do you know who use (or have used) CBD products? None 1–5 6–10 11 or more I don't know
	Attitude to CBD products (Bhamra et al., 2021) Healthy–Unhealthy Cheap–Expensive Safe–Unsafe Effective–Ineffective Well-researched–Poorly researched Well-regulated–Poorly regulated Accessible–Inaccessible
	Perceived risk (Casanova et al., 2022; Bhamra et al., 2021) Using CBD products weakens the natural immune system. Using CBD products is not convenient. Using CBD products has unpleasant side effects. Information about CBD products is hard to understand.
	Perceived benefits (Geppert et al., 2023; Choi and Hwang, 2023; Jeong and Ham, 2018) Using CBD products improves physical fitness. Using CBD products improves psychological well-being. Using CBD products can reduce the risk of health problems
	Perceived barriers (Geppert et al., 2023; Choi and Hwang, 2023; Jeong and Ham, 2018) What are the main reasons you have not tried CBD products? No interest or need Lack of information Fear of side effects Legal concerns (doubts about legality) Doubts about effectiveness Other

	Influence of social norms on non-use How much do other people influence your decision not to use CBD products?
	Consideration of future use In which conditions might you consider trying CBD products in the future?
Opportunities factor	**External cues to action** (Choi and Hwang, 2023; Jeong and Ham, 2018) I am more likely to use CBD products when: I hear about nutritional information on TV/radio I read about nutritional information in newspapers or magazines I hear about nutritional information on the Internet/social media They are recommended to me by friends or family They are recommended to me by health professionals
	Social norms concerning usage (Craveiro et al., 2021) I would often feel social pressure to use CBD products. People who are important to me would believe that I should use CBD products. People who are important to me would approve of my use of CBD products.
	Purchase channels used (Casanova et al., 2022) Where do you usually purchase CBD products? An organic product store (e.g., Kalček) An online store A supermarket/discount store A drugstore (e.g., Sanolabor, dm, Mueller) A pharmacy (e.g., Lekarna Ljubljana) A specialised CBD/hemp product store Other
Ability factors	**Source of information used** (Bhamra et al., 2021) Where did you first hear about CBD? Friends Social media News Family Health professional(s) Other
	Preferred sources of information about CBD products (Casanova et al., 2022; Nathan et al., 2020) What would be your preferred way of obtaining information about CBD products? Pharmacist Doctor The Internet A friend Health food store staff Product packaging Family Books Dietitians/Nutritionists Magazines Coaches/Fitness trainers Other

Subjective knowledge (Choi and Hwang, 2023; Flynn and Goldsmith, 1999)
Among my circle of friends, I am an expert on CBD products.
I can accurately judge the quality of CBD products.
I know quite a lot about CBD products

Objective knowledge (Choi and Hwang, 2023)
CBD is a psychoactive compound found in cannabis.
In Slovenia, CBD products can be sold as dietary supplements.
Today, it is legal to purchase CBD products in Slovenia without any restrictions.