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# Growing Green Medicine & Phytotherapy: Entrepreneurship for Sustainable Futures and Eco-Conscious Living

Master's Thesis | Sustainable Entrepreneurship Project  
 MSc Sustainable Entrepreneurship  
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June 5th, 2024

Wordcount: 8456

**Keywords:** Phytotherapy, Pro-environmental Behaviour, Theory of Planned Behaviour,  
 Spillover, Mechanisms

## **Abstract**

One of the practices of using plant-based remedies for therapeutic purposes, phytotherapy, has been proposed as a catalyst for enhancing environmental awareness and consciousness.

This dissertation's overall objective is to enhance knowledge of people's behaviour and the underlying causes of it, especially concerning green pharmacy. This was achieved by looking into how people's interactions with phytotherapy practitioners and activities affect their awareness of the environment and the adoption of sustainable practices.

Data was obtained and analyzed through qualitative interviews with eight participants to comprehend the relationship between phytotherapeutics, environmental awareness and consciousness, and behaviour. The results show that although not all participants directly link their use of phytotherapy to pro-environmental behavior, there is a general trend toward more sustainable practices and an enhanced awareness of environmental issues. A unique conceptual model was also created, emphasizing important mechanisms and spillover components found in the interviews.

These findings reflect that although phytotherapy may not be an indispensable factor in encouraging environmentally friendly behavior, it does help promote understanding of sustainability on a larger scale. With its development, novel theoretical contributions to the field of research are made, offering insights into the mediating effects of phytotherapy. With implications for future research to further examine these associations and their practical applications, the study highlights the potential of phytotherapy in promoting pro-environmental behavior and environmental consciousness.

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## INTRODUCTION

“In a society dominated by technology and fast-paced living, the need to reconnect with nature and embrace its therapeutic power has never been more pressing” (p.117, Jamal, 2023). With the dramatic shifts in health needs triggered by climate change and a growing disconnection from nature and traditional remedies, it is vital to realign with the natural environment and the basic resources that have enabled human evolution (Carrilho, 2023). Furthermore, as more people rely on pharmaceutical drugs, the quantity of circulating medication increases along with the healthcare business. Concerns over drug pollution in the environment and health hazards (e.g. antibiotic resistance) are significantly amplified by the rising manufacture and production processes (Almeida Freitas & Radis-Baptista, 2021).

The study of nature served as the foundation for medicine, indicating that natural remedies have always satisfied the essential need to treat ailments. Today, many people still find comfort in natural medicines, carrying on this tradition. Phytotherapy, a practice of green pharmacy, harnesses natural ingredients to enhance health and well-being. Extracted from plants, phytotherapeutics' active components can treat illnesses and alleviate symptoms (Trojan-Rodrigues et al., 2012). In addition, phytotherapy care is usually promoted and advocated by *herbalists*, for the purpose of this study described as specialists in the medicinal qualities of plants; offering guidance and preparing natural remedies to improve people's health and wellbeing. With roots in ancient civilisations, phytotherapeutic use offers insights into humankind's interaction with nature. Adopting it might promote ecological awareness and health benefits, by meeting people's holistic needs and restoring their connection to nature. In addition, the literature suggests that enhanced environmental awareness can lead to sustainable behavioural change (Handayani et al., 2021). Numerous observations from disciplines including sociology, environmental psychology, and sustainable development support this assumption (Grob, 1995; Ozdemir, 2023).

Generally speaking, phytotherapy' goal is to contain sickness and incorporate preventative measures into the lives of their patients (Bone & Mills, 2013). The ethical considerations in both domains are revealed by comparing this viewpoint with one of the core principles of sustainability

theory, highlighting the significance of striking a balance between both immediate and lasting consequences. According to the latter, for a project to become sustainable, it must have long-term goals capable of satisfying needs over an extended period (Cadar et al., 2021). Similarly, the adoption of green pharmacy recalls and reflects this way of thinking and transforms its usage into a lifestyle.

Thus, this study aims to unravel the yet unexplored mechanisms that connect phytotherapeutic use with ecological consciousness, awareness and behavioural choice. The present research seeks to explore how people's perceptions of health-related treatments—in this case, phytotherapy—affect their lifestyle choices, including environmentally responsible behaviours. Although people do not refer to them as sustainable entrepreneurs, herbalists may play a mediating role in this relationship and have an impact on environmental issues. After investigating how healthcare varied due to climate change, people still lack clarity on how restoring contact with natural resources affects well-being and, consequently, the environment (Jamal, 2023; Böhme et al., 2022). Following this, we have the below research question:

***RQ: How does engagement with phytotherapy practices and practitioners influence ecological awareness, consciousness and subsequent sustainable behaviors?***

Providing an answer to the RQ could benefit the field of sustainable entrepreneurship by promoting the spreading of knowledge, new research investment, and attention to different types of actions carried out by entrepreneurs. Furthermore, even while sustainable entrepreneurs' actions significantly influence sustainability awareness and encourage pro-environmental behaviour (Alcock et al., 2020), some of these actions may not be directly categorized as *sustainable entrepreneurship*. As such, it is also important to study those less typical sustainable entrepreneurship endeavors to have an overview of how they affect people's awareness of and behaviour towards the environment. The current study stipulates a detailed investigation of how phytotherapeutics, together with environmental awareness and consciousness, can promote sustainable actions.

The course of action entails carefully investigating pharmaceutical developments, with a special emphasis on the intricate field of phytotherapy and its multiple applications. By applying theoretical

frameworks, this research aims to link the spillover effects emerging from interviews and the behavioural intentions that drive those observations, as explained by the Theory of Planned Behavior (Ajzen, 1991). Subsequently, an in-depth analysis of interview data will be carried out to identify a conclusive answer to the RQ. A new conceptual model is proposed to facilitate a more comprehensive understanding of the dynamics between phytotherapy, environmental awareness, consciousness and sustainable behaviours. The latter will incorporate theoretical concepts and theories from the literature and will be improved by identifying systemic variations. The concluding sections will outline the limitations, contributions, and potential directions for future research.

## **THEORETICAL BACKGROUND**

### **Chapter 1: Natural Healing**

#### *Health Care*

Nowadays, maintaining good health requires an effort that goes beyond personal care (Carrilho, 2023). Due to the massive, rapid climate change and wider atmospheric adjustments in our system, the changing immune system does not support the same degree of healing as it did in the past (Carrilho, 2023). As a result, more and more people experience poor health (Thompson et al., 2011).

For centuries now, the healthcare sector has developed and with it, also different types of practices. For instance, Mandel (2009) explains how the terms complementary, alternative, and holistic medicine are sometimes used collectively, yet hold different meanings. Complementary medicine is used in conjunction with conventional medicine, whereas alternative medicine refers to unpopular treatments used instead of it. Rather than concentrating only on treating certain conditions, holistic medicine emphasizes treating the whole individual and integrating the mind, body, and spirit for recovery. According to holism, these components are interrelated and necessary for effective healing (Mandel, 2009). Western medicine, which is frequently linked to pharmaceuticals, often disregards the holistic aspect of health and favours synthetic drugs and innovative treatments (Mandel, 2009). In turn, traditional medicine refers to restoring health and well-being through plants, seeds, and other elements

found in nature. It places a strong emphasis on holistic methods of therapy given the ties between the environment, the body, and the mind (Mandel, 2009).

Moreover, the increasingly costly expense of drugs in light of increasing sicknesses makes a move toward traditional medicine more practical and affordable in the long run when it comes to promoting public health and wellness (Cordell, 2015). Furthermore, drug pollution is becoming a major issue for public health although most people do not deem it a threat to the environment or wellness (Freitas & Radis-Baptista, 2021). Pharmaceutical pollution involves not only significant amounts of untreated industrial effluent, but also active ingredients and residual medicines (micropollutants) discarded by households and healthcare facilities.

Thus, using traditional medicine is not only economically sound but also represents an approach to fostering health; dealing with modern health concerns and considering each person's rights and responsibilities concerning their environmental impact is critical (Matouskova et al., 2022). Building upon the above, there should be a trajectory in approaching healthcare in a way that benefits the global population while addressing the deteriorating environment, which is worsening beyond human control. Green pharmacy is necessary for the balance between human health and ecological health (Shivakumar et al. 2013).

### ***Green Pharmacy***

In nature, pharmaceutical medicines contain natural elements and their active compounds. What differs are the processes employed. As a result, choosing a more eco-friendly therapy may benefit both our bodies and the environment. There are a plethora of terms that are being used to refer to green medicine. Because of their technical nature, this terminology can confuse, and create misconceptions about the industry. Lacking a uniform term that would cover all its aspects and forms, for this study green pharmacy will be defined as a treasure trove of therapeutic potential, including a diverse range of bioactive elements that can improve health and preventively treat illness. It will include practices such as Phytotherapy, Aromatherapy, Ayurveda and more (see Appendix 1).

This research focuses on phytotherapy specifically as one of its characteristics is using less ecologically hazardous materials and innovative synthesis processes, supporting one's health and encouraging a sense of responsibility for environmental preservation and sustainability (Jamal, 2023; Shivakumar et al., 2013). Practices like homoeopathy and phytotherapy have emerged as the most commonly used remedies in green pharmacy and herbal medicine (Bone & Mills, 2013). Throughout its history, the green pharmaceutical industry has consistently applied environmentally responsible chemistry, alongside economically advantageous practices, to drug synthesis and manufacturing (Cadar et al., 2021).

### ***Phytotherapy***

When ancient humanity relied on the abundance of nature in the past and used plants, berries, fruits, and seeds as their main sources of healing, their immune systems adopted a proactive, natural approach to health that placed prevention ahead of cure. Lopes et al. (2018) tracked these practices down to China ( $\approx 3000\text{BC}$ ); classical phytotherapy makes use of medicinal plants either directly or through a variety of preparations, such as infusions and ointments. Nowadays this practice includes industrially manufactured phytotherapies, which differ in terms of clinical evidence and technological sophistication. There are diverse motivations behind phytotherapy use: expanding therapeutic options, preserving biodiversity, promoting agroecology, and advancing social and sustainable development (Ozdemir, 2023; Lopes et al., 2018). Individuals who employ phytotherapeutics are frequently those who are more concerned about their health (Lopes et al., 2018).

### ***Entrepreneurs in Natural Healing***

Not every advocate of environmentally conscious action falls into the category of *sustainable entrepreneurs*, who develop sustainability innovations and often attend the unmet demand of a wider public (Schaltegger & Wagner, 2011).

In this case, by opening up their spaces and boutiques, herbalists are launching their entrepreneurial ventures. They leverage their specialized knowledge of the medicinal properties of



plants and their active principles to deliver value to their clients in the form of health benefits, while also making earnings through this venture (Thompson & Ballard, 2011). Herbalists may not consider themselves entrepreneurs, but they are "sustainable entrepreneurs" in that they use natural goods to revolutionize the healthcare system while putting the health of people and the environment first. Their work places a strong emphasis on innovation in the provision of health and environmentally conscious solutions (Onwuegbuzie, 2011). To improve the nurture and admiration for the substances that are processed and consumed by the body—and thus, the products that are used in one's daily life—the profession of an herbalist can be in line with the field of sustainable entrepreneurship even if it is not actively pursued (Pervaiz, 2015). Similar ethical standards that herbalists follow form the basis of this argument. Thus, this emphasizes the complexity of determining how herbalists impact environmental consciousness and actions that follow.

## **Chapter 2: Theory & Practice**

The term 'sustainable lifestyles' refers to ways of living that help the environment such as using resources wisely, providing a hand to others, and treating everyone equally. This involves one's dietary habits, energy use, mobility and political ideology (Böhme et al., 2022). Living sustainably, however, implicates not just altering one's habits but also gradual changes that result in new lifestyle paradigms (Jamal, 2023). People's attitudes and intentions shift when they change behaviours, eventually encouraging them to adopt new lifestyles. Furthermore, the optimistic belief that life, particularly human life, can flourish on Earth indefinitely is the foundation of sustainable lifestyles (Ehrenfeld, 2009). This viewpoint could be overly optimistic, ignoring challenges that are lived in other realities.

### ***Biophilia Hypothesis & Connection to Nature***

Wilson's (1995) Biophilia hypothesis highlights humans' intrinsic affinity and attraction to nature and ecosystems. This notion encompasses the value of interacting with nature and its therapeutic potential through a biological need, enhancing health, productivity and socialisation. Whether one chooses to engage with animals, walk through a park to immerse in nature, or actively embrace green

healthcare treatments, biophilia offers several applications that can transform everyday momentums into revitalizing wellness spaces (Heerwagen et al., 2012).

Consequently, Tifferet and Vilnai-Yavetz (2016) introduce the concept of the Phytophilic effect (Appendix 2), defining it as the tendency of all plant kinds to stimulate positive reactions. As a major constituent of biophilia, the latter suggests that adopting green pharmacy habits and treatment methods can be considered a way of engaging with nature; thus, experiencing its curative effects can help people develop a deeper appreciation and a greater desire to protect it for future generations (Jamal, 2023). Nature promotes inner peace and harmony, and humans are naturally inclined to value and respect it.

Moreover, an extensive empirical study by Grob (1995) demonstrated that people who practice activities that promote physical as well as mental health and well-being through contact with nature (Sempik et al., 2010) behave more appropriately towards the environment.

### ***Environmental Awareness & Pro-environmental Behaviour***

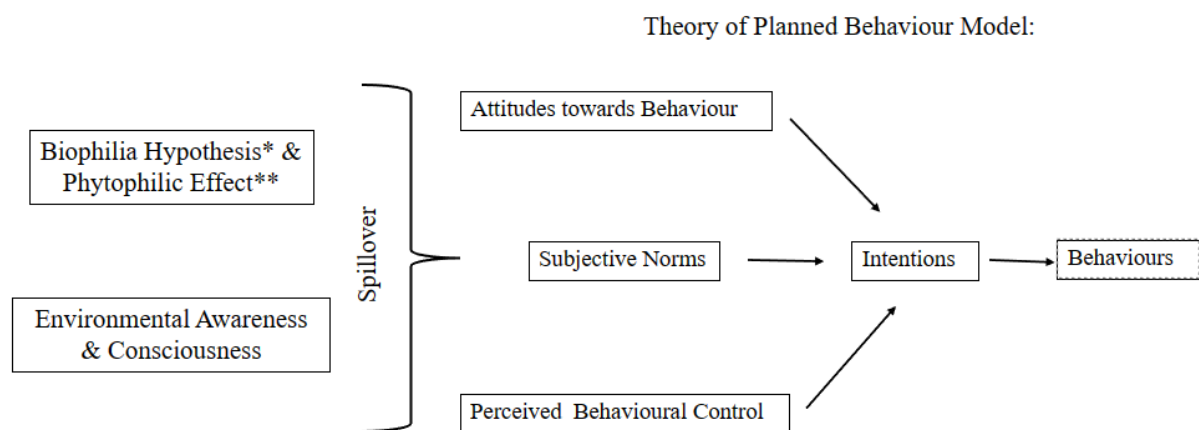
Transitioning from humans' intrinsic connection to nature, this appreciation frequently extends to promoting environmental awareness and more eco-friendly conduct. As mentioned before, the development of "sustainable lifestyles" implies a set of environmental considerations that involve behaviours taking place both inside and outside the home environment (Barr et al., 2011). Handayani and colleagues (2021) explain environmental awareness as a concept that equips one with the skills, values, and information essential to live sustainably. People are inspired to undertake environmentally friendly practices that are inherently pro-environmental and can foster a sense of responsibility towards the environment through this awareness. Environmental awareness plays an important role in raising people's consciousness of the environment (Barr et al. 2011; Handayani et al., 2021), allowing them to become responsible members of society who care about ecology and serve as an ultimate motivator for green behavior. Research suggests that a strong commitment to the environment is related to a greater awareness of one's surroundings, stressing the causal relationship between an individual's environmental awareness and pro-environmental actions. Handayani et al. (2021) conclude that environmental awareness directly leads to pro-environmental behaviour. Similarly, Barr et al. (2011) stress that

awareness of environmental issues and environmental consciousness are strongly entwined with core values and beliefs in a variety of circumstances, influencing actions that support the environment.

Overall, it appears that the more likely individuals are to exhibit high environmental awareness, the more likely they are to indicate they expect to adopt a range of pro-environmental behaviours, especially some home energy and food-related behaviours (Gatersleben et al., 2010).

### Chapter 3: Spillover effect & Theory of Planned Behaviour

Exploring how environmental awareness and consciousness drive behavioural change is crucial when exploring the theoretical foundations of behavioural shifts towards sustainability. One process could be spillover effects resulting from complex interactions impacted by the phytophilic effect and biophilia theory in addition to strong environmental consciousness and awareness. Nilsson and colleagues (2015) define the spillover effect in the environmental domain as the notion that engaging in one behaviour influences the likelihood of adopting or refraining from another. As an example, Lanzini and Thøgersen (2014) found that pro-environmental behaviours like turning off the light when leaving a room were influenced by eco-labeled purchasing, positive verbal feedback, and financial incentives. Further analysis is required to evaluate whether these mechanisms are also present in phytotherapeutic care.



\*Human's innate inclination to connect with nature and living organisms.

\*\*Organisms inclination to exhibit a strong attraction to plants, often associated with positive feelings.

Figure 1: Conceptual Model for spillover effects of Biophilia Hypothesis, Phytophilic effect & Environmental Consciousness on TPB

This study's goal is to investigate the processes and possible synergies underlying behavioural shifts in the sustainability domain. A new model is proposed to shed light on the routes leading up to changed behaviours to comprehend these dynamics, through spillover (see Figure 1). According to the Theory of Planned Behaviour (TPB) (Ajzen, 1991), intentions directly predict behaviours; the ones that cannot be completely controlled are still influenced by intentions, and factors such as abilities, opportunities, and resources. When everything is going well and there is complete control of the situation, intentions directly impact decisions (Ajzen, 1991; Hiramatsu et al., 2014). In turn, intentions are directly predicted by attitudes, subjective norms and perceived behavioural control (PBC). *Attitudes* are defined as an individual's feelings and opinions about a specific action, while *Subjective Norms* are perceived expectations or societal pressures related to an action. Finally, *PBC* is defined as whether one feels able to carry out the desired behaviour. The goal of exploring the links that promote green-spillover behaviour is to create an enhanced framework based on the TPB (Appendix 3; Ajzen, 1991).

Moreover, as a framework for predicting human behaviour (Ajzen, 1991; Böhme et al., 2022), TPB explains how intentions and attitudes lead to behaviour; aligning with the Biophilia Hypothesis (Jamal, 2023) according to which people are drawn to interact with nature. Humans experience more social pressure to act consistent with sustainability (Böhme et al., 2022) and natural commitment when societal norms support these ideals. According to TPB, a biophilic inclination and social influence work together to increase people's drive to take actions that demonstrate their appreciation and connection to the natural world (Grob, 1995; Sempik, 2010). Habits and lifestyle mechanisms can interact and spill over, forming intents and ultimately impacting behaviour. The idea of biophilia is crucial because it recognizes that humans' love and connection to nature also include an acceptance of its therapeutic value.

In addition, applying Ajzen's (1991) hypothesis to the realm of sustainability, individuals are more likely to engage in green behaviour if they have a positive attitude towards the behaviour, if people that are close to them approve of the behaviour, and if they feel control over the behaviour. Similarly, in phytotherapy, people may be more responsive to plant-based remedies when they feel

social encouragement to use them, feel good about their efficacy, and think they have control over getting access to and using these treatments aligning with TPB.

A variety of factors—including upbringing, life circumstances, medical conditions, dietary preferences, and more—can "spill over" into general habits (Nilsson et al., 2015). Someone's choice of approach to healthcare may also have an impact on some of these mechanisms. The examination of phytotherapy as a practice that can increase awareness and consciousness leading to spillover effect to sustainable behaviours is the main goal of this study.

## **METHODOLOGY**

### **Research Design**

The study of healthcare preferences and their impact on environmental awareness, consciousness and sustainable behaviour is a relatively new area of research. Furthermore, the processes that could potentially link enhanced wellness quality to environmentally responsible actions remain barely recognized. In addition, there is a need to investigate how deep comprehension of key sustainability issues may influence these mechanisms. For this, a qualitative research design was chosen, as the method that can better address and explore topics of interest effectively (Grob, 1995). Moreover, this study is prompted by an exploratory, open-ended research topic that is best addressed using a qualitative method (Subjack, 2016).

Through the examination of various behavioural patterns, semi-structured interviews enable the description and exploration of many perspectives within the domains of well-being, environmental knowledge, and concern (Yin, 2014). Interviews held in an informal, relaxed manner result in a relatively open dialogue with room for additional information (Breidenstein et al., 2015). Consequently, this approach has the most potential to grow existing understanding of how adopting a green pharmacy practice may alter a person's behaviour by raising their level of environmental consciousness.

## **Participants**

In total, eight interviews were done, and Italian was the language used. All participants are females, with ages ranging from 21 to 60, with a mean age of 39. Four of the eight interviewees were Erboristeria Shop owners (i.e. type of store specialized in offering herbal products like teas, vitamins, essential oils, and natural cosmetics derived from plants and medicinal herbs; wellness and health consultations are offered by herbalists). The remaining participants were either regular clients or consumers of phytotherapeutics.

Given that qualitative research does not benefit from random selection (Eisenhardt, 1989), participants in the latter group had to fulfill specific prerequisites. A brief description of each participant can be found in Appendix 4. A complete understanding of what green pharmacy entails, along with its benefits and fundamental methods, was crucial. All the participants are, rather than being salespersons, beneficiaries of this therapy, responsibly representing individuals at the forefront of the field.

## **Materials**

An interview guide with open-ended questions as well as follow-up questions was used by the interviewer. Appendix 5 contains specifics about this guide, which focuses on individual perspectives and experiences in the field of phytotherapy. The interviewer inquired if the participants were more aware and observant of the environment, or if they felt any behavioral patterns connected to their healthcare choices. These interviews are semi-structured, as is common for research with inductive approaches that draw conclusions from actual situations (Yin, 2014). Using the information from the interviews, the interviewer was able to ask more focused questions owing to this method.

## **Data Collection Procedure**

Interviews ran from April to May 2024, in Italy. All interviews took place in person in quiet settings that the interviewees preferred. Upon request, and for convenience, two of the eight interviews took place via remote call. Every interview was done in a time frame of three weeks and lasted thirty to forty-five minutes each.

## **Data analysis**

The theory discussed in the literature review and the insight acquired during the initial approach served as the foundation for the interview questions. With the respondents' consent, the interviews were recorded and transcribed. After that, language translation was done for the coding, which was then categorized, re-arranged and grouped in different clusters for better decodification.

In light of the existing literature and theory, an abductive approach was selected (Gioia, Corley, & Hamilton 2013). If the data reveal any surprises that the theory does not account for, abduction is prepared to consider new approaches (Subjack, 2016).

The data structure employed for the analysis included multiple phases. First, every interview was conducted and fully transcribed to guarantee thorough recording of the conversation. After transcription, the data were systematically categorized using a codification process (Atlas.ti), based on the themes, concepts, and patterns that emerged. After that, the initial codification was improved for overall comprehension and clarity, making it easier to navigate the data. The identified themes and trends were then made feasible by grouping and clustering the coded sections based on shared traits (Excel). To create a coherent link between the empirical results and the core theoretical constructs, these clusters were separated and aligned to match the theoretical framework proposed. A comprehensive examination was made possible by this approach to data organization and analysis, making it easier to explore the research objectives.

## **Quality of this research**

The interviewer aimed to maintain consistent settings throughout and presented the same concepts to each respondent in order to maintain validity and consistency. Furthermore, to keep the conversation focused, the interviewer intentionally avoided talking about more general facets of the respondents' personalities, including their political opinions or religious inclination. This helped to keep the interview's primary themes at centre stage.

Finally, to ensure that the interviewee's comments were defined as objectively as possible, the interviewer avoided hinting at potential relationships, interconnections, or mechanisms mentioned in the literature.

## **Ethical Consideration**

Given that human participation is involved in this research, it is crucial to consider ethical aspects and guarantee the ethical conduct of research following University of Groningen's guidelines. Participants had the option to abstain without providing any more details if they would have preferred to withhold some information. An explanation of the research topic and objective to the interviewee, along with the acquisition of explicit assent through a consent form, ensured informed consent. All gathered data is anonymised to guarantee confidentiality. Please see Appendix 5 & 6 for more information.

## **RESULTS**

To develop a more comprehensive theory, the clusters were cautiously divided. The findings from the interviews will be linked to the Theory of Planned Behavior, to identify spillovers and refine the framework in light of our findings. The following presents the five contributions enabled by the research. It is also key to note that none of the respondents had ever had direct experience with the term *sustainable entrepreneurship*.

### **Perception of Phytotherapy**

Participants' attitudes and perceptions regarding phytotherapy and ecological consciousness are the initial elements to examine. These are influenced by background variables such as individual definitions, viewpoints on phytotherapy in healthcare, and reasons for incorporating it into treatment regimens. Interviewee 3 described it as "*the science that studies the active principles contained in herbs and examines the processes of their interaction with the human body*"; Interviewee 1 further specifies that "*the active principles always either support or counteract the issue, but don't alter*



functionality; it should always be a complement, so if one supplements appropriately, they achieve better health”.

Additionally, participants agree that phytotherapy values preserving the body's physiological equilibrium through preventative care, addressing problems before they become illnesses (i2, 3, 5, 6). Yet, while health (pre)conditions could influence aspirations to use phytotherapy and part-take in sustainable activities, there is much more to it. Some define it as “an instinct” (i1), some as “faith” (i5) and some as “a fashion trend which I decided to keep in my routine and is now part of my everyday life” (i4).

Moreover, everything about knowledge and information to the public -or lack thereof- plays a role in subjective norms of TPB and influences the behaviour that the client undergoing phytotherapy considers. "It's extremely important to choose reliable, official sources. And I always believed that they also have a significant scientific contribution behind them" (i2).

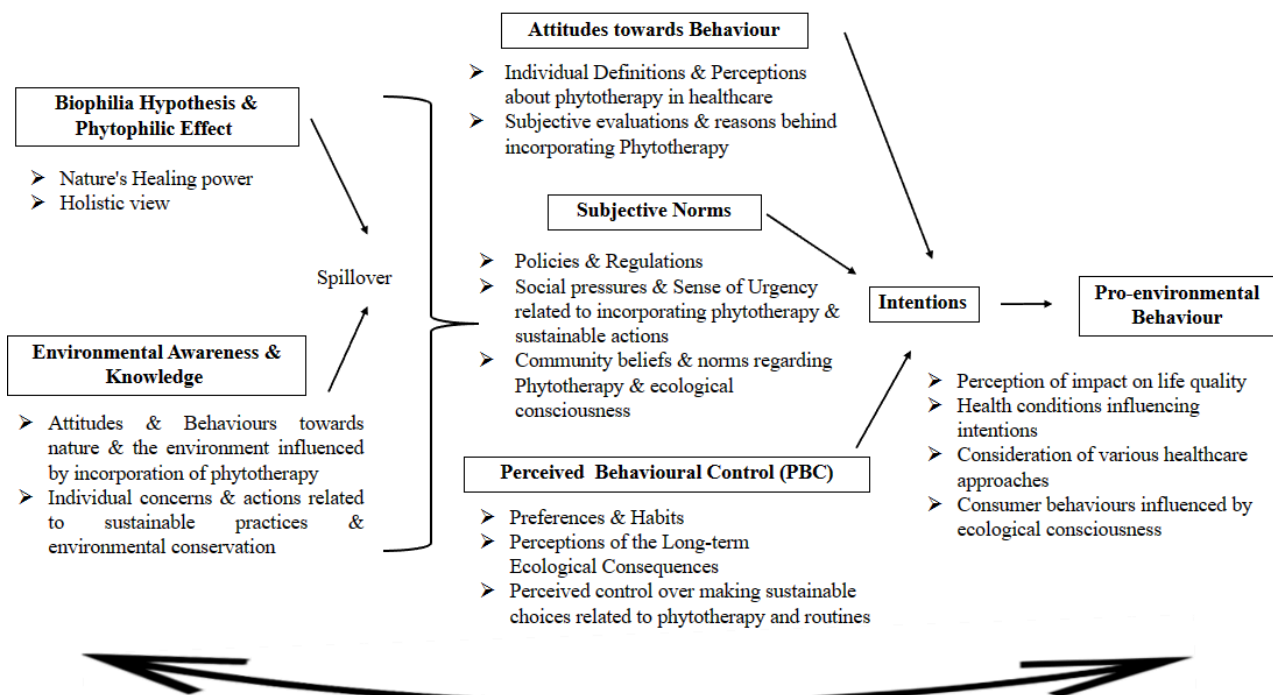


Figure 2: Identified factors contributing to spillover on Pro-environmental Behaviour.

## Antecedents of Pro-Environmental Behaviours

Different factors contribute to the spillover impact on pro-environmental activities, as illustrated in Figure 2. The clustering focuses on how much people's ecological awareness, consciousness and sustainable behaviors are affected by the incorporation of phytotherapy into healthcare routines, which

helps to answer my research question. The TPB framework serves to incorporate many components of attitudes, subjective norms, perceived behavioral control, behavioral intents, and environmental impact associated with sustainability and phytotherapy.

Understanding biophilia's scientific foundations uncovers the intrinsic bond with nature that humans share. Examining the complex mechanisms of the human nervous system reveals the physiological advantages of having a strong connection to the outdoors, as described *"People who use phytotherapy definitely share a greater focus with themselves and a community"* (i3). The latter also involves accepting nature's healing power: *"But wonderful nature, provides us with a plethora of active principles in certain areas, has not yet fully revealed itself, and therefore, it is crucial that medicine exists and continues that research"*(i2).

Based on these answers, it can be concluded that any level of passive or active engagement with nature has positive effects on the client's health. More comprehensive selection of quotes can be found in Appendix A7.1.

### ***Contextualising phytotherapy***

In contrast to the medical issues such as hypothyroidism (i1), insomnia (i7,8), COVID-19 (i3), and Vitiligo skin disease (i5) that some participants faced, the customer base of phytotherapy shares the state of perceived stress or wellness deficiency. The findings indicate that participants experience a rise in positive energy flow, decreased stress and irritation and a concentration boost. This mirrors the phytophilic effect, arguing that well-being gained from plants entails embracing and integrating nature's curative qualities, thereby enhancing overall wellness.

Moreover, the initial approach to phytotherapy differs from person to person. Feelings of identification with nature alleviate stress, while fascination with nature aids in the restoration of cognitive capacities following mental exhaustion .

*"It [phytotherapy]'s something that works holistically, in the end, it's a form of formamentis, right? If I'm stressed, I light an aromatherapy candle or use an aroma diffuser, and then I try to face life. It's like an instinct"* (i3).

Therefore, the apparent rationale for the substantial interest and belief in the curative properties of phytotherapy is its ability to effectively treat the physique's demands on an integrative, holistic level. *"A deeper connection with oneself, a more intimate moment of self-listening, can be incredibly helpful. If one listens to themselves and starts understanding, they can also identify where their imbalance lies"* (i2). Most importantly, all participants alluded to the idea that gratitude for what nature provides us should be reflected in our actions: *"Our behavior should reflect gratitude towards what nature provides us"* (i1). Appendix A7.2 provides a better collection of quotes relevant to this context. When it comes to vitality, environmental consciousness plays a very delicate role, particularly when applied holistically as it does in this instance. Additionally, participants agree that phytotherapy values preserving the body's physiological equilibrium through preventative care, addressing problems before they become illnesses (i2, 3, 5, 6).

Research proves that enhancing the resilience of personal care is a key component of the sustainability and quality improvement agendas, which aim to prevent patients from getting sick (Thomson & Ballard, 2011). In conclusion, long-term use of phytotherapeutics has led regular clients to attest to enhanced health, environmental concern and lifestyle. Moreover, they think that their pain tolerance is higher than usual (i6), and they attribute this improvement to the knowledge and assistance that phytotherapy offers in managing pain (Appendix A7.3).

Furthermore, being environmentally conscious encourages people to adopt sustainable, holistic lifestyles that promote both individual and global health by strengthening their bond with the natural world. Findings unravel that expectations come along: *"There are, [expectations] that perhaps there is growing awareness, especially regarding the courtesy one should show towards the environment, regarding plastic use, avoiding pollution, and turning off the car"*(i5).

In particular, having someone who can advise, and promote a product over another enables clients to build a connection based on sincere trust, to a certain extent even intimate (i4, 5). *"My homeopath focuses on what's called terrain treatment, which involves a cycle of phytotherapeutic*

*remedies taken over a long period, ranging from 3 to 6 months, working specifically on what's referred to as the terrain." (i7).*

In the context of phototherapy, many people find that it helps to have a professional alongside who can both interpret and understand their unique conditions and feel their needs instinctively. This process leads to a noticeable change in behavior patterns, which are more in line with sustainable principles and pro-environmental behaviours. Broader array of quotes is offered in A7.4.

### **Determinants of TPB triggered by phytotherapy through antecedents**

The three factors that comprise the TPB—attitude toward the behavior, subjective standards, and perceived behavioral control—will be discussed in more detail in the section that follows. The reason for this is because several interview responses alluded to specific elements within TPB and, interestingly, closely match the behavioral patterns defined by Ajzen (1991), even though they were not stated during the interviews (the idea to implement and enhance the TPB framework developed later).

Attitudes towards behavior can greatly influence one's intentions, therefore acts. Even though participants did not say so out loud, it is clear from their remarks that they are, indeed, developing environmentally friendly practices. In the instance of interviewees 1 and 8, their personal narratives and opinions toward their surroundings definitely influenced their behavior toward all of the activities they presently engage in, as well as how they incorporated them into their lifestyle: *"Knowing that everything we do is connected to a part of this world... and that we're part of it. How can we deprive ourselves of certain luxuries Earth gifts us? or better yet how can we damage it still?" (i1).*

It is likely that those who work in the phytotherapy sphere don't always realize how their activity contributes to sustainability. *"I prefer reusable materials, both in my private life and work. People think I don't use the car or elevator because I'm obsessed with fitness: but what's the point of wasting energy when I can regenerate mine by moving?"(i8).*

As to subjective norms and social influences, the translation of intentions into behaviours can be aided or hindered by social pressures and conventions concerning sustainable activities: *"Recognizing I belong to a generation that is frequently defined by the "I want it new, unique, and now" attitude, I make*

*an effort against expectations and maximize all resources at my disposal [...] minor things like clothes, reusable materials and simple at-home-recycling"* (i8). In this case, the respondent feels compelled to adopt particular behaviors because surrounding peers and communities highlight the potential flaws of a whole generation. They are motivated to embrace this habit even if it means spending greater sums or effort because they believe that people want them to use particular items and have specific attitudes.

Feeling a sense of urgency, whether from social pressure or a personal desire to embrace ecological practices and phytotherapy, is another facet of subjective norms. Some participants even blame their lack of environmental awareness on governmental or perhaps, legal infrastructure: *"And the deception lies in consumerism, not in respecting nature, because if I buy anything, I should know its production costs, origins and so on..."* (i1).

Moreover, policies and legislation that provide support for sustainable development have the potential to enable greener behavioural changes, and vice versa. Interviewee 1 even said, *"The European Union could have been much stricter and more rigid regarding certain regulations on antibiotics, heavily chemical-based fertilizers, damaging animals and the environment..."*. Despite governments' efforts to better accommodate such activities and the extensive availability of information on the internet, respondents unexpectedly identified governmental agencies, demonstrating that intents to act in a particular way are largely impacted by authorities as subjective norms.

Although there are a myriad of sources available through the internet (i4), there is huge misinformation (i6). On top of that, *"... unfortunately, people get enchanted by these things"* (i6) and often get scammed over products which are untruthfully advertised (i5). Finally, findings show that people who have a stronger connection to the natural world are more inclined to participate in pro-environmental activities that are supported by their social networks, which has a substantial influence on subjective norms according to TPB.

PBC in this context refers to people's perception that they may choose natural therapies like phytotherapy to live healthier. They feel more in control of their health outcomes in day-to-day situations because they know they can treat common injuries with natural remedies.

While some respondents (i2, i4, i6) do integrate phytotherapy with more treatments such as aromatherapy, yoga, meditation and massage therapy, others avoid synthetic medical drugs. Interviewee 1 agrees with i5 and i7, saying they know of *“the negative impacts medicines may have on my body and overall health”*. Contradicting, interviewee 6 proceeded to indicate that they try to steer clear of medications *“because there’s a whole process behind it, apart from antibiotics in animals, even to produce a simple painkiller, it requires a lot of plastic, a lot of water, emissions, and so on.”*

Perceptions of phytotherapy’s impact on overall life quality and ecological consciousness further shape PBC. One thing that appears to worry certain respondents is the quality of life— how they envision aging rather than their life expectancy: *“Medicine allowed us to have a longer life expectancy, but phytotherapy enables a higher life quality, and this is something fundamental... it’s useless to live 300 years but live like corpses”* (i3). Nonetheless, human biology plays a crucial role: *“...each of our genetic heritage somewhat writes our destiny, so to speak [...] you shouldn’t squander the benefit you’ve been gifted with”* (i4). However, as individuals feel more capable of controlling their own health and becoming independent from physicians, doctors and other influences, they start feeling better and appreciate their own lifestyle more.

Thus, it appears transparent from the interviews that natural remedies are preferred, mostly because of the missing side effects, even in the case of modest use of prescription drugs. This contrasts sharply with pharmaceutical drugs, which can have a wide range of negative side effects, many of which are more severe (i5). Finally, people feel better and are better able to appreciate their own lifestyle when they start to feel more in control of their own health and become less dependent on medical professionals, medications, and other outside influences.

## **Mechanisms for which Intentions Transform into Behaviours**

Together with the features mentioned above, there are mechanisms by which intentions can become actions, explaining how a real desire for a healthier lifestyle can materialize in pro-environmental actions, with environmental awareness and consciousness acting as triggers in that conversion process. *“I guess that wanting a healthier lifestyle was the first step [...] but I don’t mean healthier related to doing more sports or eating salads no, I mean healthier in that I care how I interact*

*with the world around me and how I choose to live my day. To me living sustainably means being healthier no? You live healthier and so does the Earth” (i8).*

Based on the interviews, a few of these processes have been identified for converting intentions into sustainable routines. Participants covered an array of relevant topics, such as their meat consumption, changes to organic diets, participation in protests and activist manifestations, consumer behaviours involving plastic use, personal carbon emissions, and choices regarding lifestyles in general.

More specifically, two participants assert their dietary changes to both their environmental concern and sustainability interest, but also for personal interest and concern for what is introduced in our bodies: *“Because I like to understand, what you put into your body, essentially. Okay, I tend to have many more shampoos and creams at home that are controlled, much more from natural sources. Even if I don't pay too much attention to it”*(i6). Appendix A7.5 provides more, relevant quotes.

The two participants stated that their own desire to be careful of what they put into their bodies motivated their dietary modifications in addition to their interest in sustainability and environmental concerns: *“Surely the choice [becoming vegetarian] at 17 started as an environmental concern, for its impact, and then came a certain sensitivity towards animals, because the human being encompasses the whole anti-speciesist discourse... at 17, the choice was precisely to be more sustainable”* (i6).

In indicating that they may eventually become vegans (i6, i7), respondents admit that their choice is impacted by sustainability issues—mainly related to animal abuse—as well as their desire for mindful eating that is in line with their physical well-being, as was previously mentioned.

When asked about their active contribution to safeguard the planet, real action is taken by the participants; such as joining environmental conservation projects or contributing to them, after developing intentions to incorporate phytotherapy and adopt sustainable behaviours. *“We created the famous initiative Bio-Est<sup>1</sup> which is an event where artisans and people who advocate for nature come together”* (i1). They show their dedication to environmentally responsible living and preservation of the environment by taking these steps: *“Yes, I was enrolled in a lot of courses, like Legambiente, WWF Marine Park, and I looked for ways to deepen this connection. I enjoy spending time outdoors”* (i2).

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<sup>1</sup> Ecological naturalist association, "working to save nature and the planet for future generations and to reduce harmful human activity today." ([Bioest.org](http://Bioest.org))

Partly owing to their gained knowledge, participants demonstrate an inbuilt intrinsic willingness, recognizing a real interest and a strong desire to be as sustainable as possible. Most participants are keen on getting involved in sustainable development and strive collaboratively for a brighter future. These revelations illuminate the various channels via which people convert their intentions into deeds that support sustainability and a more natural, healthy way of life.

### **Double-direction of Awareness & Behaviour: Reinforcing Acts**

An interesting finding from the interviews is that respondents acknowledge a strong emotional connection to nature, entwined with their feelings when in natural environments. *"For me, plants are an integral part of life. It's logical that there's a connection; loving plants in this way inevitably makes me feel the need to protect them and, consequently, the environment"* (i3).

Furthermore, a person's initial natural connection to and relationship with their surroundings will heighten their interest in environmental consciousness, which will support the adoption of sustainable behaviors - especially if encouraged from a young age. *"My parents have always had respect for the environment, nature, and animals, ever since I've known them, so since I was born"* (i2). Findings also suggest some participants had a similar upbringing, which either helped to shape or promote their particular form of manners: *"Growing up I was lucky enough to grow up surrounded by nature and was thought to appreciate it, which led me to take certain decisions throughout the rest of my life"* (i8).

There's even the case of a person who embellishes the topic by connecting their personal appreciation and concern for the environment and the globe to food production, claiming that: *"If we have already addressed the issue of nutrition, we have already addressed the issue of health"*(i1).

The results of the interviews in this study successfully establish the bidirectional relationship between environmental awareness and pro-environmental behavior, as noted by Handayani et al. (2021). See Appendix A7.6.



## **Expanding on the Term “Sustainable Entrepreneurs”**

Despite gaining traction, the term “sustainable entrepreneur” is frequently misused or not used at all in situations where appropriate. Even while companies identify themselves as "sustainable," this does not always convert into quantifiable, tangible activities that support environmental, social, and economic sustainability - eventually carried out.

*"There is more awareness and also more choice; in short, I can choose biodegradable plastic with a vegetable purchased in packaging, so I can make the chosen choice, for example" (i2).*

This gap between actions and words emphasizes that sustainability needs to be approached in a serious and methodical way in the entrepreneurial world. This simply happens because some activities—like those by herbalists—might not always be incorporated into procedures that are meant to be eco-friendly, they just are. Nonetheless, their dedication to sharing information and beneficial influence are remarkable.

As business owners, the herbalists recognize their attention and care for the products they purchase: *"I definitely pay more attention to the recycled bottle or to the milk container. Generally, you are attentive to the environment; you pay attention to your shampoo, not just because it may be good for your skin, but also because it may be beneficial for the environment, leaving no residues, etc" (i5).* This illustrates how awareness and consciousness can influence pro-environmental behavior, and conversely, practicing eco-friendly behaviors can increase one's awareness of the environment.

## **DISCUSSION**

The main objective of this dissertation was to deepen the understanding of individuals' behaviour and its antecedents, especially regarding green pharmacy. This was achieved by examining how interaction with phytotherapy practitioners and practices impacts individuals' ecological consciousness and adoption of sustainable practices.

The desire to investigate the intricate connections between sustainable practices, environmental concern, and healthcare practice and the possible influences of herbalists on people's attitudes and behaviours led to the development of this project. For this, a theoretical framework was proposed which linked the biophilia hypothesis and environmental awareness to the Theory of Planned Behaviour (TPB)

via spillover effects as a possible mechanism to explain how using plant-based medicine could lead to other green behaviours. This discussion section will provide a clear evaluation of the study's shortcomings and an improved version of the framework initially presented (Figure 2), explaining the theoretical and practical implications of the findings.

### ***Summary of Key Findings***

Based on interviews with eight people who integrate phytotherapy as a daily practice it can be concluded that if this therapy is adopted, it most likely will stick with an individual. More specifically, there was a consensus on its long-term benefits: better quality of life and longevity, better approach to life circumstances, deeper connection to internal and external wellness of one's organism and more tranquil methods of dealing with convalescence.

Interviewees found themselves thinking about details of their lives they had never thought before (i4, 5, 7, 8). Furthermore, they felt uncomfortable admitting that they were uneasy with the prospect that, in the bigger picture of things, they might not always have complete control over their behavior and that external forces may be influencing their characteristics.

Interestingly, some participants mentioned that they do not associate their phytotherapeutic use with having more pro-environmental behaviours, indicating that the suggested link might not be apparent in everyone's mind. Thus, phytotherapy might not be a necessary component in influencing people's actions to become more eco-friendly. All eight participants, however, showed signs of a sincere and genuine concern for sustainable development. This suggests that although there may not be a general consensus regarding the direct correlation between the use of phytotherapeutics and pro-environmental behaviors, there is a general awareness and dedication to environmental sustainability among the participants.

### **Overall Contributions**

This work demonstrates an original combination of health care and environmental responsibility by reframing phytotherapy and taking it beyond its conventional limits. An innovative change in how

healing techniques are perceived is triggered by exposing the mutually beneficial interaction between individual behaviour, environmental consciousness, and phytotherapy practices. The results challenge popular opinions, resulting in a new era in which sustainability and healthcare merge, offering hope for a time when environmental stewardship and health go hand in hand.

Scholarly studies, supported by evidence collected through interviews, demonstrate that people who adopt phytotherapy are exceptionally mindful of what substances they introduce into their bodies. This growing awareness of their environs not only demonstrates a commitment to their well-being but also a wider concern for the natural and spiritual balance of their surroundings.

As the term "spillover" indicates, engaging in one behaviour can affect one's tendency to adopt or refrain from another. After thorough study, a multitude of mechanisms and links emerged such as phytotherapeutic use and better stress-management (13, 4); genuine interest and curiosity for phytotherapy lead to a profession-making; certain individuals' use of phytotherapy has been either enabled or compelled by family situations or household circumstances; and dietary changes were implemented in almost all of the interviewees' lives. The latter clarifies the possible channels via which spillover effects may appear in the rational route of the TPB, hence influencing intentions and following actions.

Moreover, previous studies hypothesized that environmental knowledge leads to pro-environmental behaviour and that consumer values and core beliefs alter this behaviour in various settings (Gatersleben et al., 2010; Handayani et al., 2020). Within the realm of green pharmacy, phytotherapy appears to be closely associated with this notion. The relationship between the phytophilic effect and the biophilia hypothesis facilitates sustainable behaviours.

Contrarily, present findings also show that using phytotherapy as a healthcare modality simply reinforces individual beliefs and personal values deeply ingrained in each patient. Furthermore, people perceive their actions and attitudes towards healthcare remedies and environmentally conscious behaviours as more akin to a lifestyle choice than a deliberate development.

The latter is important as findings reveal that environmental awareness and the spillover effects seen in Figure 2 unquestionably influence people's intentions, whether or not they engage in sustainable behaviour. But a sincere concern for the "holistic whole" also originates from intrinsic sources. This is

significant as it raises the prospect that in the future, unconventional, organic, natural remedies that received less attention than deserved, might prove to be the most effective ways of treating our distressed planet.

## **Theoretical Contribution**

This paper contributes to the literature by shedding light on individuals who actively support sustainable practices through their businesses, but may not be recognized as traditional "sustainable entrepreneurs," providing insightful information about the field of sustainable entrepreneurship.

Expanding on Grob's (1995) research on the relationship between people's interaction with nature and their gratitude for it, this research emphasizes the importance of social networks in promoting environmental awareness and eco-friendly practices. A deterministic approach among sustainable entrepreneurs was revealed through interviews, demonstrating how their traits correspond with systemic modifications that encompass subjective standards and TPB.

These entrepreneurs may not be classified as "sustainable," even though they conform to sustainability principles; this suggests that new standards are required to properly recognize them. The study also emphasizes the multidisciplinary abilities of herbalists, who have plenty of experience with both business operations and therapeutic remedies, highlighting the possibility for interdisciplinary cooperation in the promotion of sustainability.

Another unique feature and contribution of this work is the creation of a completely new conceptual model, as depicted in Figure 2. Its development was enabled by the interviews, which made it easier to identify the more important mechanisms and spillover components.

## **Practical Contribution**

By establishing links with other fields including sustainable development, psychology, and green pharmacy, this work has important practical implications for the field of sustainable entrepreneurship.

It underlines the emergence of interrelated mechanisms within this framework, demonstrating how curiosity about complementary therapies and remedies often prompts a deeper examination of similar matters. Furthermore, the research highlights the significant emotional bond that each individual has with the environment, presenting it as more than just a matter of personal preference.

These uncovered mechanisms are beneficial to researchers and practitioners alike, as they greatly improve the sciences of phytotherapy and behavioral psychology. Through increasing consciousness of the mutual connection between our attempts to enhance global health and our personal well-being, this study promotes a more profound reflection of our interdependence with the natural world. From a practical standpoint, it encourages us to acknowledge that how we treat our planet is a reflection of how we treat ourselves and that we should embrace more sustainable and holistic approaches to benefit both.

## **Future Research**

Although this study offers valuable insights, it is important to recognize its limits. First of all, though every question was meant to be gender-neutral, focusing just on interviewing women could lead to biases. Although steps were taken to reduce this possibility, objections against the sample's representativeness can still be made.

Additionally, while the term "green pharmacy" has been established in a number of publications throughout the literature, its exact meaning is still up for debate. As a result, the study's primary focus on phytotherapy may have limited how many other techniques fall under the larger umbrella of green pharmacy. This limitation highlights the need for more research to provide a more thorough understanding of the area by examining a wider spectrum of sustainable healthcare practices within the framework of green pharmacy.

## ***Conclusion***

Recognizing that Earth is a unique organism, provides important new perspectives on the possibilities for alternative therapies. These forms of treatment have healing qualities, but they also have

an element of spirituality that supports a holistic view of health that goes beyond the material world. This insight highlights how important it is to cultivate a closer relationship with the Earth, understanding that the health of the whole depends on the health of the group.

Developing this consciousness emphasizes how important it is to show appreciation for the planet and treat it with the same respect and consideration we give to our own bodies. The symbiotic relationship between humans and the environment is respected by avoiding synthetic substances and contaminants, opening the door to a peaceful coexistence.

Furthermore, it is important to recognize the variety of sustainable businesses that may not be explicitly identified as such. These businesses, whose goals are seen as "normal," have a big impact on how people behave and how they do environmentally friendly acts.

Their subtle yet essential contributions work as catalysts for improvement, encouraging people to lead more sustainable lives on an individual and community level. We are reminded of the transforming potential present in all activities that are in line with the principles of sustainability when we consider these revelations. Through stepping up our efforts and accepting a shared responsibility for the environment, we strive to create a more promising and sustainable future for the generations to come.

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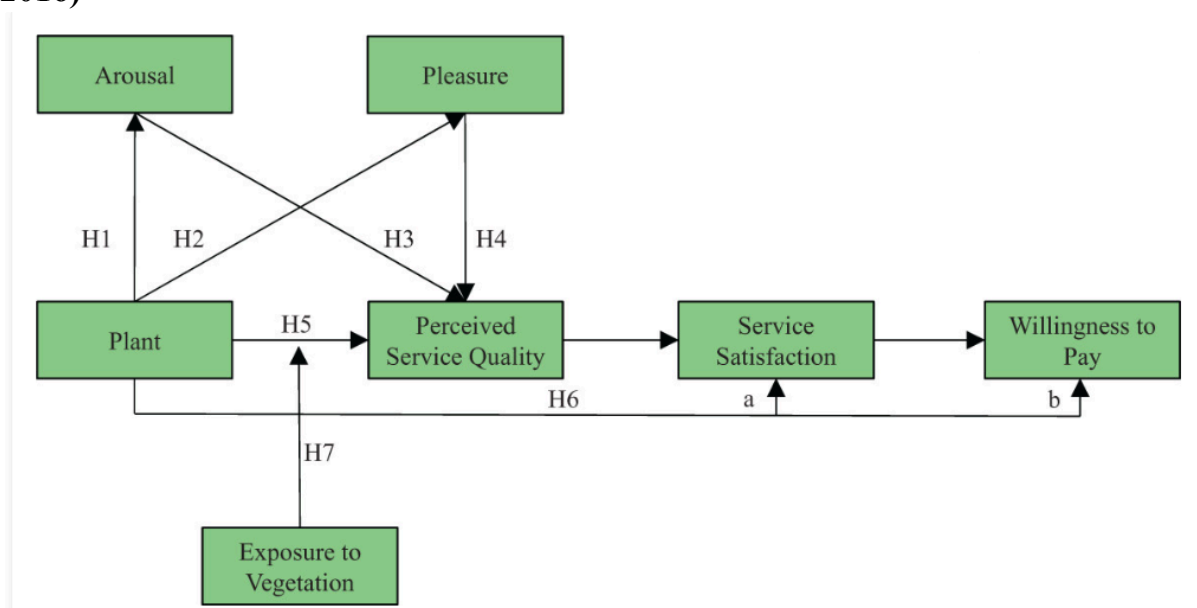
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## APPENDIX

### Appendix 1 - Overview of Green Pharmacy Practices: Description and Classification

Phytotherapy (Trojan-Rodrigues et al., 2012)	extracted from medicinal plants, phytotherapeutics' active components can treat illnesses and alleviate symptoms.
Aromatherapy (Cadar et al., 2021)	makes use of essential oils that are derived from fragrant plants and used topically or inhaled to enhance mental, emotional, and physical health.
Homeopathy (Shivakumar et al., 2013)	founded on the idea that drugs (plants' active principles) generating symptoms similar to the condition can be used to treat those symptoms in extremely diluted amounts.
Traditional Chinese Medicine (TCM) (Kruk et al., 2018)	encloses practices such as acupuncture, the use of Chinese herbs, Chinese dietetics, Qi Gong, and Shiatsu to promote energetic and physical balance.
Ayurveda (Kruk et al., 2018)	Indian traditional medical system that balances the body, mind, and spirit via the use of medicines, food, yoga, massage, and other techniques.
Applied Kinesiology	is a method that makes use of the muscles to find any physical imbalances and recommend remedies that may involve consuming supplements or herbs.

### Appendix 2 - Conceptual Model of the Phytophilic effect (Tifferet & Vilnai-Yavetz, 2016)



### Appendix 3 - Basic model of TPB (Ajzen, 1991)

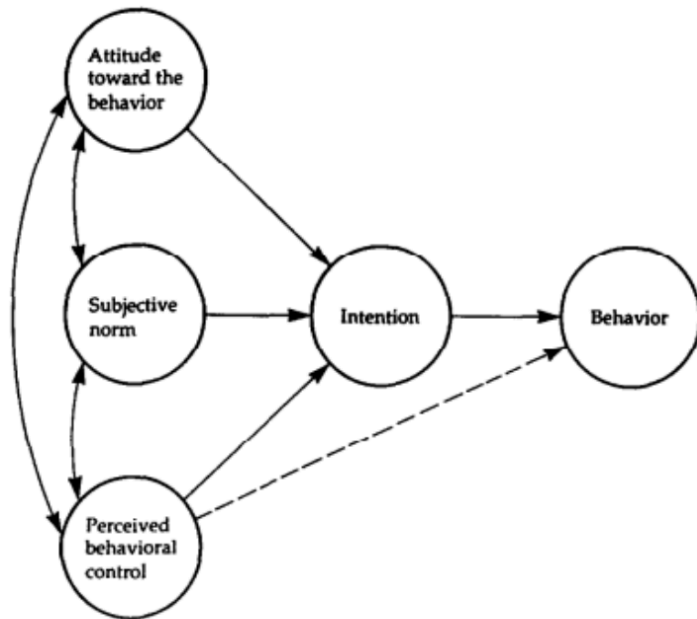


FIG. 1. Theory of planned behavior.

### Appendix 4 - Brief description of the Interviewees

Interviewee 1	Following their graduation from herbal medicine school and acquisition of a diploma, the herbalist turned entrepreneur opened their own herbal shop.
Interviewee 2	Following their graduation from herbal medicine school and acquisition of a diploma, the herbalist turned entrepreneur opened their own herbal shop.
Interviewee 3	Following their graduation from herbal medicine school and acquisition of a diploma, the herbalist turned entrepreneur opened their own herbal shop.
Interviewee 4	Currently employed at a company. They developed an interest in phytotherapy during their time in college. After learning about phytotherapy, which she loved, she made the decision to live the remainder of her life with this type of therapy.
Interviewee 5	They initially intended to become lawyers, but instead, they had fallen in affection for phototherapy by chance. They carried with the family business, which over time evolved into a herbalist shop.
Interviewee 6	University student who decided to incorporate phytotherapy into their daily routine after growing up in a family environment where it was practised.
Interviewee 7	University student who decided to incorporate phytotherapy into their daily routine after growing up in a family environment where it was practised.
Interviewee 8	Currently employed. They decided to incorporate phytotherapy into their daily routine after growing up in a family environment where it was always considered as alternative and decided to incorporate it as a priority.

## Appendix 5- Questionnaire for Interviews

Demographics	<ol style="list-style-type: none"> <li>1. What is your age?</li> <li>2. What is your gender identity?</li> <li>3. What is your highest level of education completed?</li> <li>4. What is your current employment status?</li> <li>5. How would you define phytotherapy, What's your personal definition?</li> </ol>
Reasons and Triggers	<ol style="list-style-type: none"> <li>6. How long have you been using phytotherapeutics?             <ol style="list-style-type: none"> <li>a. How do you use them, what are your practices?</li> </ol> </li> <li>7. What were the main reasons that led you to phytotherapy?</li> <li>8. Are there any health conditions...?             <ol style="list-style-type: none"> <li>a. Have you noticed a change in how you approach or manage these conditions since you started herbal medicine?</li> <li>b. Have you noticed any specific improvements since you started using herbal remedies? If yes, could you share some examples?</li> </ol> </li> <li>9. How did you discover herbalism, and what are your expectations regarding its benefits for your health?</li> <li>10. What role has the advice of an herbalist played in your journey of care and well-being?</li> </ol>
Personal experience	<ol style="list-style-type: none"> <li>11. How do you integrate herbal medicine with other forms of treatment or therapy you're undergoing? (good for characteristics of respondents - their habit in using this treatment)</li> <li>12. Have you had difficulty finding reliable information or resources on herbal medicine?</li> <li>13. What are your expectations regarding the long-term results of using herbal medicine in your health regimen?</li> </ol>
Behaviour Change, Sustainability and Ecological Consciousness	<ol style="list-style-type: none"> <li>14. Has your experience with herbal medicine influenced your consumption <b>behaviour</b> towards natural or organic products?</li> <li>15. How have you integrated the holistic <b>approach</b> of herbal medicine into your daily life beyond managing specific health conditions?             <ol style="list-style-type: none"> <li>a. How does this approach affect your decisions regarding diet, physical activity, or emotional well-being?</li> </ol> </li> <li>16. Have you noticed a change in your overall <b>approach</b> to nature and the environment since you started using herbal medicine?             <ul style="list-style-type: none"> <li>- How has this change influenced your daily choices and lifestyle?</li> <li>- Have you taken concrete actions to support or participate in environmental conservation initiatives?</li> </ul> </li> <li>17. Have you experienced a greater connection with nature or sensitivity to local ecosystems through the use of phytotherapy?             <ul style="list-style-type: none"> <li>- Have you sought ways to deepen this connection, such as spending more time outdoors or participating in environmental volunteer activities?</li> </ul> </li> <li>18. Have you noticed any changes in your concern for environmental protection and the need to act sustainably?</li> </ol>

## Appendix 6 - Information Sheet & Consent Form for Interviewees

### INFORMATION SHEET

Phytotherapy use and Behaviours towards sustainability

Dear X,

Thank you for your interest in participating in this research. This letter explains what the research entails and how the research will be conducted. Please take time to read the following information carefully. If any information is not clear kindly ask questions using the contact details of the researchers provided at the end of this letter.

#### WHAT IS THIS STUDY ABOUT?

- This research aims to delve into the underlying mechanisms shaping individuals' attitudes and behaviours towards sustainability, with a particular focus on exploring the influence of phytotherapeutic practices.

- There will be a total of 10 interviews
- You have been included in this research because of your knowledge and experience in the phytotherapy industry.

#### WHAT DOES PARTICIPATION INVOLVE?

- Participation involves answering the 16 questions prepared beforehand which include also some follow-up questions.
- The interview should take 45 to 60 minutes

#### DO YOU HAVE TO PARTICIPATE?

- Participation in this interview is entirely voluntary, and you have the right to withdraw at any time without consequence.
- Participation in this study is entirely voluntary, and participants have the autonomy to withdraw at any moment and decline to answer any questions without facing consequences or needing to provide reasons.

#### ARE THERE ANY RISKS IN PARTICIPATING?

- There are no risks in participating in this research.

#### ARE THERE ANY BENEFITS IN PARTICIPATING?

- Participation in this research offers no direct benefits; however, your involvement may contribute significantly to the advancement of knowledge in our research areas and provide valuable insights for future groups of patients

#### HOW WILL INFORMATION YOU PROVIDE BE RECORDED, STORED AND PROTECTED?

- To ensure confidentiality and anonymization, all participant data will be stored securely following the GDPR of the University, with access restricted to authorised personnel only.
- Following the interviews, recordings will be transcribed, coded, and translated as necessary, after which the original recordings will be promptly deciphered and permanently deleted from our records.

#### WHAT WILL HAPPEN TO THE RESULTS OF THE STUDY?

- The results of the study will be analyzed by myself, and the thesis will undergo evaluation by two individuals, including my academic supervisor and a co-assessor. Subsequently, the research findings will be presented at the Campus Fryslan Conference, where additional professors will have the opportunity to engage with the research.
- After the presentation at the Campus Fryslan Conference, all recordings will be permanently deleted, and any results will be anonymized to ensure they cannot be linked to any specific individual.

#### ETHICAL APPROVAL

- This research study has obtained ethical approval from the Campus Fryslân Ethics Committee, ensuring adherence to ethical guidelines throughout the study.
- Furthermore, the researchers commit to upholding themselves to the highest standards of ethical conduct throughout all stages of the research process.

#### INFORMED CONSENT FORM

- By signing the informed consent form, participants acknowledge their intention to participate in the study while retaining the right to withdraw at any time without repercussion.

#### WHO SHOULD YOU CONTACT FOR FURTHER INFORMATION?

- Researcher's Name: Asia Virginia Zalla
- Contact Cell Number: +39 346346 3629
- Contact Email: asiaaviriniaaa@gmail.com

#### INFORMED CONSENT FORM

Phytotherapy use and Behaviours towards sustainability

##### Assessment

- I have read the information sheet and was able to ask any additional question to the researcher.
- I understand I may ask questions about the study at any time.
- I understand I have the right to withdraw from the study at any time without giving a reason.
- I understand that at any time I can refuse to answer any question without any consequences.
- I understand that I will not benefit directly from participating in this research.

##### Confidentiality and Data Use

- I understand that none of my individual information will be disclosed to anyone outside the study team and my name will not be published.
- I understand that the information provided will be used only for this research and publications directly related to this research project.
- I understand that data (consent forms, recordings, interview transcripts) will be retained on the Y-drive of the University of Groningen server for 5 years, in correspondence with the university GDPR legislation.

##### Future involvement

- I wish to receive a copy of the scientific output of the project.
- I consent to be re-contacted for participating in future studies.

Having read and understood all the above, I agree to participate in the research study: yes / no

Date & Signature

To be filled in by the researcher

- I declare that I have thoroughly informed the research participant about the research study and answered any remaining questions to the best of my knowledge.
- I agree that this person participates in the research study.

Date & Signature

## Appendix 7 - Findings Table with Quotes from interviews

	Theoretical Construct	Representative extracts from interviews
A7.1	Nature's Healing power	"It is essential to stop in nature; you stop and observe it. And if you observe it, feel it, live it, it resonates within you, it fills you up with peace, and as a result, it becomes easy for you to do things that are good for the environment."(I5)
		"I tend to link nature and my surroundings on a planetary level, seeing them as very positive concepts of general connection. You feel like a part of a whole and not just a part of yourself."(I6)
A7.2	Holistic view	"If I manage to keep my body in nature and just breathe more and do some exercises [...] I can feel my body responding, responding well." (I1)
		"When I wake up, I can feel the scent of spring, of nature, freshly cut grass, birds chirping, and everything inside me vibrates. I feel connected, yes, yes."(i4)
A7.3	Environmental Perception (Consciousness & Awareness)	"I have changed a lot in my perception of how much I impact the environment; the choice to become vegetarian, paying attention to products that are not tested on animals, etc. all stemmed from a personal interest in caring for the environment" (i6)
		"I would define it more as a lifestyle, including my healthcare treatment preference [...]the feeling of wanting to be in nature grew, and I guess I became more sensitive to all aspects, regarding climate change and similar issues

		because I have informed myself." (i7)
		"It depends on the sensitivity and magnanimity of each of us. It's very difficult to detach ourselves from the daily routine that surrounds us. Perhaps these practices teach us to look beyond ourselves and our daily problems." (i2).
A7.4	Herbalists - Connection, Intimacy & Trust	"Differently from perhaps a pharmacist or a doctor, they don't just focus on the pain, but on all aspects of your life, therefore improving your entire existence and not just focusing on the single problem, but taking into consideration many more factors, you could almost call it holistic."(i6)
		"Having had her by my side since my mum was pregnant with me made me understand that long-term care is much more intimate [...] knowing someone's body better than them is a skill" (i8)
A7.5	Lifestyle Choices & Changes	"This philosophy has always pushed me to be very careful with nutrition as there's a lot of emphasis on watching what one introduces into their body. I have always tried to eat well [...] in our family many products are locally sourced, organic, and I am vegetarian and my idea for the future is to become vegan." (i7)
		"In my opinion, when you live in a certain way, you also tend to surround yourself, to do things in a certain way." (i4)
		"I don't feel better than others because of this [...] but I'm aware that my consumption of meat has halved during the years and it's because I can handle it and it is honestly just much more sustainable in the true meaning of sustainable no?! (i8)
A7.6	Respect for our Surroundings	"It's like, everything that happens, including wars, makes me think that if there's no respect for the environment, if there's no respect for the world, then what's happening now happens."(i2)



		<p>"I chose not to give money to the meat industry, and yet, I still support the animal products industry because I am against capitalist logic. In my opinion, we don't live to work, so why not choose to spend our time perhaps outside the city, in nature?" (i7)</p>
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