



UNIVERSIDADE D
COIMBRA

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**MODELLING ATTITUDE TOWARDS
CONSUMPTION OF VEGAN PRODUCTS**

**Doctoral Thesis in Business Management,
supervised by Doctor Professor Arnaldo Coelho,
presented to Faculty of Economics of Coimbra University**

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Modelling attitude towards Consumption of Vegan Products

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Veganism

We feel entitled to artificially inseminate a cow and steal her baby, even though her cries of anguish are unmistakable. Then we take her milk that's intended for her calf and we put it in our coffee and our cereal.

Joaquin Phoenix's Oscars speech, 10-02-2020



Aknowledgments

In this battle chosen by me, there were many moments when I judged that my tools were worn out or unfit. I thought I had found my borderline – that I wouldn't have the will, nor the ability to cross to the other side. I thought about giving up, letting the sun go down, and the moon hide what it doesn't show. Sometimes the question was: why do you want to continue, why do you want to cross this barren ground that so often seemed to me without water and without life? But my battles are chosen by me, they are fought by me, and apparently, I also have the ability to win them. Strangely enough, my love for animals and nature helped to fill this chapter of my life with willpower, attitude, and an enthusiasm that at times seemed infinite.

And the many shrugs of shoulders I got when people learned the theme of this project only strengthened my belief in a future in which all living beings can live in our shared natural environment.

Who can I thank? Very easy, to my Jedi Master Professor Arnaldo Coelho! He's a human being who believed in me every day. The amazing human being, who looked at the girl from "Humanities" without any prejudgment, and who believed in her many times more than she believed in herself. May the force be with you always, Master Jedi!

Soon after, Professor Cristela Bairrada; what to say? Thank you so much for everything! You are sincere, direct, and effective. It will be a cliché to thank Cristela for believing in me, perhaps, but I do it anyway. Thank you for your support and for believing in this project and in me.

And now, at the bottom of my pyramid, the structure of my being, the ones that held my fort. My husband José, without you all these words would not have been written, and my thoughts would not be displayed. My sisters Anabela Sousa and Paula Cruz, you light up my life and my heart.

And lastly, one of the most memorable women I have ever met, Professor Irma Brito; you would always say "You got this". Because of you I allowed myself to do this.



Abstract

Purpose: Veganism is eliminating the use of animal products, whether regarding food, clothing, hygiene and beauty products, or products that eradicate animal habitats. The rising alarms towards the environment and animals have multiplied in recent times. Living currently without using animal products is nevertheless rather difficult. Veganism is a way of life and vegan consumers may experience difficulties in leading this regime. Due to the shift towards an increasingly sustainable, healthy and ecological lifestyle, veganism became trendy and may represent, nowadays a very important and promising market. Therefore, an investigation based on 4 studies was carried out with the following objectives:

The investigation strategy was based on 4 studies. First, a bibliometric analysis unveils how veganism intersects with the marketing world, more specifically intersecting veganism with consumer behavior issues. This analysis also steers at top vegan studies, and shows which topics concern the studies on veganism. Second, we want to understand the effect that personal antecedents – such as health awareness and social influence – and moral antecedents – such as environmental concerns and animal welfare – have on attitudes towards veganism, and their impact on engaging with vegan products. The impact of attitude and involvement with vegan products on purchase intention and word of mouth is also analyzed. Idealism is a moderator of these proposed relationships. Third, understanding what impacts the willingness to belong to a vegan tribe, whether the antecedents are more ecologically motivated (ecological motivations, environmental concerns, and animal welfare), or of a more personal extent (social influence, idealism) is also intended. The influence vegan tribalism can have in the involvement with vegan products and WOM, and how it can be moderated by the attitude towards the consumption of vegan products are also studied. Finally, accentuating ethical, environmental and social implications, vegan values are not only followed up by vegans, but also by those who purchase vegan products but do not consider themselves as vegans. Therefore, the last study investigates which are the factors that influence the involvement with vegan products by comparing vegans and non-vegans. Besides informing on the influence that involvement with vegan products might have on eudemonic and hedonic

happiness, purchase intention, and price sensitivity, the antecedents presented may be classified in eco-motivated factors (ecological motivations, environmental concerns, animal welfare), and personal factors (social influence, idealism). The impact of the price sensitivity on the purchase intention is also added. New perceptions and awareness on vegans as consumers, and their influences in businesses and marketing insights are thereby provided.

Methodology: The first investigation used information collected from the WoS database and the VOSviewer software to provide a bibliometric analysis and graphic analyses on the subject. The research words used were “vegan”, and “consumer” or “customer” or “attitudes” or “consumption” or “purchase”, since these keywords seem to capture most of the relevant literature concerning veganism, and vegans as consumers. The second and third studies used a structured questionnaire to collect data from two cross-sectional samples of 224 Portuguese vegans and 356 Brazilian vegans. The fourth study also used two cross-sectional samples, one of 580 vegans and another 517 non-vegans. For these three studies responses were gathered from members of four vegan Facebook groups with a total of 284.900 members. Lastly, all three studies used structural equation modelling to test the proposed hypotheses and the moderation effects.

Findings: These are the main findings of this investigation: First, publications merely about veganism and consumer behavior are rare. Top published papers are usually about vegetarianism. Second, studies focusing on vegans as consumers, and about the consumption of vegan products, are not frequent. Third, the results show that the attitudes towards veganism do not depend on personal issues, but quite more on moral concerns. Efforts towards reducing animal ingestion, protecting the environment, and respecting natural life are ethically-oriented. Fourth, moral matters, ecological drives, eco-friendly attitudes, and animal well-being influence individuals to be in a vegan tribe. The necessity to be part of a tribe is shared with the struggle of being vegan and being accepted as vegan – according to the results it seems that social motivations appear to be absent. Tribalism has an influence on involvement with vegan products and WOM, but it is moderated by vegan attitudes. Fifth, ecological motivations and social influence are not major issues impacting vegans involved with vegan products. Vegans become vegans due to their

ideological views. Ecological motivations are deeply related to animal welfare and inherent in vegan individuals. Finally, the results about non-vegans' behavior show that idealism does not impact involvement with vegan products, possibly due to their lesser moral views about the environment and animal welfare. Non-vegans consume vegan products but do not stop de ingestion of meat. In non-vegans, however, social influence becomes a significant predictor.

Implications/Originality: Given the limited studies on vegans as consumers and their behavior, more studies about vegans and their purchase habits and involvement are needed due to the growth of veganism. This investigation connects the personal and moral determinants influence on veganism by using idealism as a particular context to investigate these relationships, comparing Brazilian and Portuguese respondents, and the effects of national cultures. The study also features an investigation comparing the impact of personal and eco-motivated determinants on the inclination to be in a vegan tribe by using the attitudes towards vegan products consumption as a particular context to investigate these relationships, comparing Brazilian and Portuguese respondents, and the effects of national cultures. Lastly, the impact of personal and eco-motivated determinants are studied, comparing vegan and non-vegans in what concerns their involvement with vegan products, also comparing how the involvement with vegan products predicts consumer behavior patterns among both vegans and non-vegans.

Limitations:

Regarding the first study, WoS data offered a limited number of publications regarding only veganism or about the vegan as a consumer. Major vegan studies in the marketing area, vegans and non-vegans as consumers, and consumers of vegan products are almost inexistent. Also using the WoS limits studies by covering only journals included in WoS and covered by the chosen time frame. The second, third and fourth investigations are cross-sectional studies that do not allow inferring causality. The proposed models should be replicated in other countries and other online vegan groups in order to understand behavior and attitudes towards vegan products, as well as the willingness to belong to a vegan tribe, since cultural aspects seem to be relevant in the three studies. The marketing

area stands to gain from these investigations, by trying to recognize what drives vegan way of life, vegan tribalism, purchase behaviours of vegans and non-vegans and what influences the involvement with vegan products.

Keywords: veganism, attitudes, involvement, vegan lifestyle, vegan products, consumer, customer, consumption, purchase, bibliometric analysis, idealism, tribalism, vegan tribe, vegan, non-vegan

Resumo

Objetivo: *O veganismo é a eliminação do uso de produtos de origem animal, seja em relação a alimentos, roupas, produtos de higiene e beleza ou a produtos que erradicam os habitats dos animais. Nos últimos tempos, aumentaram as preocupações em relação ao meio ambiente e aos animais. No entanto, viver atualmente sem usar produtos de origem animal é bastante árduo. O veganismo é um estilo de vida e os consumidores vegans têm dificuldade em cumprir esse regime. Devido à mudança para um estilo de vida cada vez mais sustentável, saudável e ecológico, o veganismo tornou-se um tendência e pode representar, hoje em dia, um mercado muito importante e promissor.*

A estratégia de investigação foi baseada em 4 estudos. Primeiro, uma análise bibliométrica revela como o veganismo se cruza com o mundo do marketing, mais especificamente cruzando o veganismo com as questões de comportamento do consumidor. Esta análise também orienta os principais estudos vegans e mostra quais os tópicos abordados em estudos sobre veganismo. Em segundo lugar, pretende-se compreender o efeito que antecedentes pessoais - como consciência de saúde e influência social - e antecedentes morais - como preocupações ambientais e bem-estar animal - têm nas atitudes em relação ao veganismo e seu impacto no envolvimento com produtos vegans. O impacto da atitude e do envolvimento com produtos vegans na intenção de compra e publicidade boca a boca (WOM) também é analisado. O idealismo é um moderador dessas relações propostas. Em terceiro pretende-se entender o que impacta a vontade de pertencer a uma tribo vegan, se os antecedentes são mais ecologicamente motivados (motivações ecológicas, preocupações ambientais e bem-estar animal), ou de uma extensão mais pessoal (influência social, idealismo) também é pretendida. A influência que o tribalismo vegan pode ter no envolvimento com produtos vegans e WOM, e como ele pode ser moderado pela atitude em relação ao consumo de produtos vegans também são estudados. Por fim, acentuando as implicações éticas, ambientais e sociais, os valores vegans não são seguidos apenas por vegans, mas também por aqueles que compram produtos vegans, mas não se consideram vegans. Portanto, o último estudo investiga quais são os fatores que influenciam o envolvimento com produtos vegans, comparando vegans e não vegans. Além

de informar sobre a influência que o envolvimento com produtos vegans pode ter na felicidade eudemônica e hedônica, na intenção de compra e na sensibilidade ao preço, os antecedentes apresentados podem ser classificados em fatores eco motivados (motivações ecológicas, preocupações ambientais, bem-estar animal) e fatores pessoais (influência social, idealismo). O impacto da sensibilidade ao preço na intenção de compra também é adicionado. Novas percepções e consciência sobre os vegans como consumidores e suas influências nos negócios e percepções de marketing são fornecidas.

Metodologia: *A presente investigação utilizou informações recolhidas no banco de dados WoS e no software VOSviewer para fornecer uma análise bibliométrica e apresentar análises gráficas sobre o assunto. As palavras utilizadas na pesquisa foram “vegan” e “consumidor” ou “cliente” ou “atitudes” ou “consumo ou compra”, uma vez que essas palavras-chave parecem captar o máximo da literatura relevante na área do veganismo e dos vegans como consumidores. O segundo e o terceiro estudos utilizaram um questionário estruturado para recolher dados de duas amostras transversais de 224 vegans portugueses e 356 vegans brasileiros. O quarto estudo também usou duas amostras transversais, uma de 580 vegans e outra de 517 não vegans. Para esses três estudos, as respostas foram recolhidas de membros de quatro grupos vegans no Facebook, com um total de 284.900 membros. Por fim, todos os três estudos usaram equações estruturais para testar as hipóteses propostas e os efeitos de moderação.*

Resultados: *Estas são as principais conclusões desta investigação: Primeiro, publicações meramente sobre veganismo e comportamento do consumidor são raras. Os principais artigos publicados são geralmente sobre vegetarianismo. Em segundo lugar, os estudos que se foquem nos vegans como consumidores e sobre o consumo de produtos vegans não são frequentes. Terceiro, os resultados mostram que as atitudes em relação ao veganismo não dependem de questões pessoais, mas muito mais de preocupações morais. Os esforços para reduzir a ingestão de animais, proteger o meio ambiente e respeitar a vida natural são orientados por questões éticas. Quarto, questões morais e ecológicas, atitudes ecológicas e bem-estar animal influenciam os indivíduos a fazerem parte de uma tribo vegan. A necessidade de fazer parte de uma tribo é partilhada com a luta de se ser vegan e ser aceito como vegan - de acordo com os resultados, parece que as motivações sociais parecem estar*

ausentes. O tribalismo influencia o envolvimento com produtos vegans e WOM, mas é moderado por atitudes vegans. Quinto, as motivações ecológicas e a influência social não são os principais problemas que afetam os vegans envolvidos com produtos vegans. Os vegans tornam-se vegans devido à sua ideologia. As motivações ecológicas estão profundamente relacionadas ao bem-estar animal e são inerentes aos indivíduos vegans. Finalmente, os resultados sobre o comportamento de não vegans mostram que o idealismo não afeta o envolvimento com produtos vegans, possivelmente devido às suas visões menos morais sobre o meio ambiente e o bem-estar animal. Não-vegans consomem produtos vegans, mas não interrompem a ingestão de carne. Em não-vegans, no entanto, a influência social torna-se um indicador significativo.

Implicações/Originalidade: *Dados os estudos limitados sobre vegans como consumidores e seu comportamento, mais estudos sobre vegans e seus hábitos de compra e envolvimento são necessários devido ao crescimento do veganismo. Esta investigação une a influência dos determinantes pessoais e morais no veganismo usando o idealismo como um contexto particular para investigar essas relações, comparando entrevistados brasileiros e portugueses, e os efeitos das culturas nacionais. O estudo também apresenta uma investigação que compara o impacto dos determinantes pessoais e eco motivados na tendência para fazer parte de uma tribo vegan, usando as atitudes em relação ao consumo de produtos vegans como um contexto particular para investigar essas relações, comparando entrevistados brasileiros e portugueses, e os efeitos das culturas nacionais. Por último, o impacto dos determinantes pessoais e eco motivados são estudados, comparando vegans e não vegans no que diz respeito ao seu envolvimento com produtos vegans, também comparando como o envolvimento com produtos vegans prenuncia os padrões de comportamento do consumidor entre vegans e não vegans.*

Limitações: *Em relação ao primeiro estudo, os dados do WoS ofereceram um número limitado de publicações relacionadas com o veganismo ou sobre o consumidor vegan. Os principais estudos vegans na área de marketing, consumidores vegans e não vegans como e consumidores de produtos vegans são quase inexistentes. Também usar o WoS limita os estudos, abrangendo apenas revistas incluídas no WoS e pelo período de tempo escolhido. A segunda, terceira e quarta investigação são estudos transversais que não permitem*

inferir causalidade. Os modelos propostos devem ser replicados em outros países e outros grupos vegans online, a fim de compreender o comportamento e as atitudes em relação aos produtos vegans, bem como a vontade de pertencer a uma tribo vegan, uma vez que os aspectos culturais parecem ser relevantes nos três estudos. A área de marketing tem a ganhar com essas investigações, ao tentar reconhecer o que estimula o modo de vida vegan, o tribalismo vegan, os comportamentos de compra dos consumidores vegans e não vegans e o que influencia o envolvimento com produtos vegans.

Palavras-chave: *veganismo, atitudes, envolvimento, estilo de vida vegan, produtos vegans, consumidor, cliente, consumo, compra, análise bibliométrica, idealismo, tribalismo, tribo vegan, vegan, não-vegan*

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List of Abbreviations

- WOM (word of mouth)
- WoS (Web of Science)
- TPB (Theory of planned behavior)
- EFA (Exploratory factor analysis)
- SEM (Structural equation model)
- CFA (Confirmatory factor analysis)
- AVE (Average variance extracted)
- IFI (Incremental fit index)
- TLI (Tucker Lewis index)
- CFI (Comparative fit index)
- RMSEA (Root mean square of error approximation)
- χ^2/df (Chi square/ Degree of freedom)
- CR (Composite reliability)
- RO (Ranking order)
- PCRM (Physicians Committee for responsible medicine)
- GHG (Greenhouse gases)
- ATV (Attitude towards the consumption of vegan products)
- INV (Involvement with vegan products)
- HA (Health awareness)
- EC (Environmental concerns)
- AW (Animal welfare)
- SI (Social Influence)
- PI (Purchase intention)
- SRW (Standardized regression weights)
- CMV (Common method variance)
- SD (Standard deviation)
- TRIB (Tribalism)
- EM (Ecological motivations)
- ID (Idealism)
- EUD (Eudemonic Happiness)
- HED (Hedonic happiness)

PS (Price sensitivity)

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Chapter I - Background

1.1. Research Context

Veganism is a lifestyle that eliminates all forms of animal abuse and cruelty (The Vegan Society, n.d.b). Food, clothes, make-up, medication, leather shoes, films, Zoos, Circus – anything connected to any kind of animal usage is rejected by vegans. Understanding veganism has become more and more important in the past decades. The increase in books, scientific investigation, online communities, and social media groups has been increasing tremendously. Veganism is growing rapidly year after year and all over the world (Raggiotto, Manson, & Moretti, 2018; Kalte, 2020). In 2018, *Ipsos Global Advisor* conducted a survey in 28 countries, and responses showed that 3% of the population considered themselves vegan, and also *The Economist* (2019) projected that there would be 79 million vegans in January 2021.

Veganism has been approached mainly by the medical community in terms of knowing the benefits and impact on vegan individuals. The growing interest in this lifestyle calls for the need of businesses to examine and project vegan products and services. Even though vegans are still a small number, the impact of veganism in markets is growing (Radnitz, Beezhold, & DiMatteo, 2015; Janssen, Busch, Rödiger & Hamm, 2016). Therefore, companies need to know how vegans think and how they relate to vegan products, in order to adapt the market to vegans. Vegan individuals have a different diet and philosophy, so marketers must understand what drives them. The vegan customer's view is vital in order to understand how to promote vegan products (Ruiz de Maya, Lopez-Lopez, & Munuera, 2011; Wescombe, 2019). Understanding what influences vegans is vital, so that marketing strategies are improved or adapted. Leading to purchase vegan, organic, natural, and ecologically friendly products is a benefit that can assure a company's success (Chen, Lin, & Chang, 2014; MacDonald & Oates, 2006; Raggiotto *et al.*, 2018).

Despite misconceptions that the vegan lifestyle entails a lot of struggle (Earle & Hodson, 2017), frequently publications are about why somebody becomes vegan (Wescombe, 2019;

Kalte, 2020). Studies show that usually health issues and environmental matters are main reasons to become vegan. But how veganism changes consumer segments, what it means to be vegan in a meat-eating world, how a vegan consumer behaves, why individuals chose vegan products although there not vegan, are issues typically not covered by publications.

This research is about the vegan individual as a consumer. The focus is to understand how vegans relate to vegan products and how their values and ideologies influence their purchasing actions. This study aims to contribute to a wide-ranging conceptual framework, based on what influences someone to become vegan, and on the consequences of following this lifestyle regarding consumption and social interactions. The ultimate goal is to give a solid contribution to marketers and businesses in order to help them improve their actions when marketing vegan products.

Furthermore, this study aims to understand vegans' social interactions. To be linked to a social group is something natural in every individual. The need to be with others that understand and think the same way is natural and is associated to the need to be accepted (Clark, Stewart, Panzone, Kyriazakis & Frewer, 2016). When the reasons to be vegan are religious or cultural, prejudice is not really felt by vegans. On the other hand, when the reasons are moral and ideological – environmental threats, and animal welfare – the support of others is not always immediate (Jabs, Devine & Sobal, 1998; Ruby, 2012; Kalte, 2020). Few research mentions the social effects of being vegan (Earle & Hodson, 2017). Since eating is a rather social moment – family, friend, and professional gatherings – being vegan in these moments is difficult (Earle & Hodson, 2017). Thus, research about veganism as a social movement and its effects on routines and lifestyles is narrow even if valuable data concerning vegan identity can be gathered (Cherry, 2015; Greenebaum, 2012; Ciocchetti, 2012; DaSilva, Hecquet, & King, 2019). Vegans are perceived as more ethical and moral (Grauel, 2016), and to be part of this movement is to be linked to a community with high ethical values (Martinelli & Berkmanien, 2018).

1.2. Research Problems and Questions

Veganism has been growing expressively (Kalte, 2020) – vegan products, recipe books, and online information (Véron, 2016) are increasing and impacting businesses and therefore marketing strategies. Veganism is a cultural movement of moral standards. Some literature studied why people are vegan, but such was not the specific goal of these studies, considering research is usually about vegetarianism. The social context of vegan consumption has not yet been deeply studied (Cooper, 2018; Wilson, 2019; Tunçay Son & Bulut, 2019). As mentioned, vegan consumer segments should be analyzed in order to improve marketing strategies (Greenebaum, 2018). It is imperative to understand the vegan consumer behavior in order to acknowledge difficulties in the dissemination of vegan products, and to recognize what drives vegan consumption (Kalte, 2020). Literature is scarce in showing the complex relationship between vegans' beliefs and attitudes (Tunçay Son & Bulut, 2019). Vegans embrace this lifestyle due to animal welfare, environmental concerns, and because they are ecologically motivated to help the planet (Cherry, 2015; Cooper, 2018; Wilson, 2019; Tunçay Son & Bulut, 2019). However, studies on vegan as consumers and their behavior are rather insufficient (Braunsberger & Flamm, 2019; Plohl, Petritz & Stern, 2020). In addition, according to Kalte (2020), attitude towards the consumption of vegan products must be understood in order to help this rising market.

Whether the reasons driving vegan individuals are moral or personally based, these motivations impact their attitudes. Attitudes towards vegan products and the vegan's belief system point out equally important consequences. Although vegans are driven by moral and personal reasons, the fact remains that this lifestyle incorporates other consequences (Wilson, 2019; Kalte, 2020). Literature has yet unveiled the intricate relationship between attitudes and beliefs concerning food choices or regimes (de Gavelle, Davidenko, Fouillet, Delarue, Darcel, Huneau, & Mariotti, 2019) and stigmas that prevent individuals from changing to a vegan lifestyle (Rosenfeld & Tomiyama, 2020).

Furthermore, only a few studies have stated how hard it is to find adequate vegan products, the prices are high and the transition from a meat diet to vegan diet is not always easy (Phua, Jin & Kim, 2019). The difficulty in finding vegan products due to their specificity

makes it difficult to choose this lifestyle (Cherry, 2006; Cherry 2015). Due to this strict lifestyle, vegans must take into account many features when looking for products that totally satisfy their requirements (Earle & Hodson, 2017). High prices are relevant when the consumer is searching or looking for the best suited products, and affordable prices can also be difficult (Wescomb, 2019; Kalte, 2020). The impact of meat production and consumption on the ecosystem has barely been studied (Wang *et al*, 2017; DaSilva, Hecquet & King, 2019). There are only a few studies that mention the difficulty that comes along with this lifestyle (Earle & Hodson, 2017). The difficulties found by vegans have shown that some individuals are not totally vegan, for they might not ingest meat but buy leather shoes or watch a film that has animals in it. Being vegan is a challenging decision. Whether eco-motivated, personal-motivated or pro-animal-motivated, the vegan movement influences many areas in life (Earle & Hodson, 2017; Kalte 2020).

It is evident that veganism influences many if not all aspects of a person's lifestyle. Socially there are also consequences. It's not easy to maintain both social relations and this lifestyle. Investigation on how veganism impacts lifestyle and what it entails is limited (Cherry, 2015; Greenebaum, 2012; Ciocchetti, 2012; DaSilva, Hecquet & King, 2019). Partaking in the same social groups might find hindrances that make life difficult. The social relations within family and friends and even within work circles are deeply influenced by veganism. These barriers or obstacles might influence and limit social relations due to the lack of understanding others may have about veganism as a way of life (Earle & Hodson, 2017; Kalte, 2020). Family gatherings, meeting friends, or even a business dinner will be deeply influenced by veganism (Greenebaum, 2018) – there might be a lack of vegan options during a family festivity, or the absence of vegan courses in a restaurant during a friends or business dinner, which might limit the choice of vegan individuals. The uncomfortableness caused by this lack of choices can prevent vegans to attend next time (Earle & Hodson, 2017; Kalte, 2020). It is easier when the reasons to be vegan are religious or cultural, but it is harder to be understood by others if the motive is moral (Greenebaum, 2018). There are few studies on the social impact of being vegan and on the relationship between vegans (Earle & Hodson, 2017; Greenebaum, 2018; Kalte, 2020). Tribal behavior in vegans appears to be an option for them so that they can feel welcomed and understood. When compared to brand communities and brand tribes a vegan tribal behavior can be

expected. Vegan tribes help their individuals to be welcomed and understood. Also, the possibility to understand involvement with vegan products and word-of-mouth can be studied more accurately.

Regarding the involvement with vegan products, what involves vegan choices, vegan lifestyle and vegan consumptions among the non-vegans has scarcely been studied (Norel, Kommers, Hoof & Verhoeven, 2014; Earle & Hodson, 2017; Bagci & Olgun, 2019). Some studies show what means being vegan nowadays, but not variances between vegans and non-vegans when it comes to the consumption of vegan products (Pfeiler & Egloff, 2018). Also, research concerning impact of veganism on well-being is still limited (Costa, Gill, Morda & Ali, 2019).

The present studies aim to investigate and understand:

- 1) How veganism and marketing are connected, particularly regarding consumer behavior using a bibliometric analysis. The bibliometric analysis allowed to detect the main developments in previous literature in order to recognize the relations between veganism and marketing, also identifying gaps and opportunities for future research;
- 2) How personal (health awareness and social influence) and moral (environmental concerns and animal welfare) antecedents impact on attitudes towards veganism and their effects on the involvement with vegan products, on purchase intention, word of mouth, using idealism as a moderator of these relationships.;
- 3) What influences the willingness to belong to a vegan tribe by presenting eco-motivated antecedents (ecological motivations, environmental concerns, and animal welfare) and personal antecedents (social influence and idealism)? How the influence of vegan tribalism impacts involvement with vegan products and WOM, using attitude towards the consumption of vegan products as a moderator.
- 4) What influences the involvement with vegan products comparing vegan and non-vegan individuals? Eco-motivated antecedents (ecological motivations, environmental concerns, animal welfare) and personal antecedents (social influence, idealism) are used. Besides the previous variables, also the influence of involvement with vegan products on eudemonic

and hedonic happiness, purchase intention and price sensitivity is studied, as well as the impact of price sensitivity on purchase intention.

1.3. Thesis Structure

This thesis is entitled “MODELLING ATTITUDE TOWARDS CONSUMPTION OF VEGAN PRODUCTS” because it is the initial project submitted to this University.

The first chapter addresses the background of the study, where the research context and research questions are presented, followed by the description of its structure. The second chapter is the literature review that gives a general perspective of investigation concepts. The third chapter is dedicated to explaining the adopted methodologies. Then, the investigation strategy is based on a bibliometric analysis and on empirical investigations using four studies, corresponding to four submitted papers, leading to the following chapters:

Chapter IV presents both the academic publications and knowledge on the topic, pointing out past research trends and identifying potential future paths of research in veganism. It presents a systematic literature review according to the bibliometric approach based upon Web of Science and VOSviewer, specifically intended on seeking studies focusing on veganism and consumer behavior, and other marketing related studies. This analysis covers the published articles and the annual number of quotations for the period between 1900 and 2018, as registered by the Web of Science database. The goal is to detect the most relevant research in veganism and understand what has been studied over the last years. It starts with the evolution and data analysis between 1994 and January 2021, publications per year, number of publications per category, journals analysis, number of publications by journal, keywords analysis, the 15 most relevant items in each cluster according to the keyword analysis, geographical analysis by country, analysis of publications by organization, citations analysis, analysis of authors, a comparison between the most cited authors and quotations in articles between 1994 and January 2021, and an analysis of study opportunities. The main contributions of this study are the identification of the most relevant research trends, and showing that veganism is usually not the main

topic in the most cited articles. Last but not least, it also presents future research opportunities.

Chapter V identifies the impact of personal antecedents, health awareness and social influence, as well as moral antecedents, environmental concerns and animal welfare on the attitude towards vegan products consumption, and also the effects of the involvement with vegan products, along with their impact on purchase intention and word of mouth. Idealism is the moderator of these proposed relationships. Results confirm that attitudes towards veganism are not influenced by personal reasons, but by moral concerns. Motivations to decrease animal intake, defend nature, and respect animals are conducted by ethical values.

Chapter VI intends to understand what impacts the willingness to be in a vegan tribe: eco-motivated backgrounds (ecological motivations, environmental concerns, and animal welfare), personal backgrounds (social influence, idealism), and also the influence of vegan tribalism on the involvement with vegan products and WOM. The moderating role of attitude towards the consumption of vegan products is presented. The results show that moral matters, ecological motivations, environmental concerns, and animal welfare influence individuals to be in a vegan tribe due to the difficulty of being acknowledged as a vegan, although social motivations appear to be lacking. Tribalism impacts the involvement with vegan products and WOM, but is moderated by vegan attitudes towards the consumption of vegan products.

Chapter VII proposes an understanding of what influences the involvement with vegan products, comparing vegan and non-vegan individuals. Here are presented eco-motivated antecedents (ecological motivations, environmental concerns, animal welfare) and personal antecedents (social influence, idealism). Besides the antecedents, also the influence of involvement with vegan products on eudemonic and hedonic happiness, purchase intention and price sensitivity are studied. Furthermore, the impact price sensitivity has on purchase intention is analyzed.

The second and third studies used a structured questionnaire to collect information from two cross-sectional samples of 224 Portuguese vegans and 356 Brazilian vegans among Facebook vegan groups. For the fourth study two cross-sectional samples, 580 vegans and 517 non-vegans, collected from four vegan groups on Facebook, with a total of 284.900 members. In the three studies Structural Equation Modelling (SEM) is used to test the proposed hypotheses.

This thesis ends with a general conclusions chapter, presenting the overall view about the investigation and its contributions.

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Chapter II - Literature Review

2.1. Introduction

The vegan diet involves only vegetables and legumes, whole grain products, fruits, nuts, and seeds. Vegans believe animals have emotions like humans – they experience sadness and joy. Besides the diet, veganism also entails the avoidance of animal-based products intake, and of products that have been tested on animals (Greenebaum, 2012). Therefore, products from the area of medicine, cosmetics, detergents, clothing and building materials, any animal tested products, circuses and films with animals will not be used by vegan (Tunçay Son & Bulut, 2019; The Vegan Society, n.d.a). Not only has veganism expressively increased in the last years, as also the consumption of vegan products in all ways possible: vegan food, vegan cookbooks, and online data (Véron, 2016). Additionally, veganism has become a significant and growing field of research, and new research topics are being explored (Rosenfeld & Tomiyama, 2020). Whether the reasons are personal or ecological, being vegan means permanent challenges and is not an easy decision according to The Vegan Society (n.d.a). At a social level being vegan appears to be even more of a challenge, since most non-vegan tend not to accept or understand, or even ridicule vegans. Vegans like to be with people who understand them, who accept their lifestyle and their moral principles. Few studies have demonstrated the impact of being vegan in the 21st century in a world where meat consumption is widespread and considered normal (Earle & Hodson, 2017; Bagci & Olgun, 2019).

2.1.1. Veganism

Vegans do not consume or use products derived from animals (The Vegan Society, n.d.a). A vegan diet is mainly based on plants, no meat or fish, no dairy products, no products like honey (Piia, Markus & Mari, 2019). Veganism is a stringent lifestyle, where all animal-derived products are left out of the everyday-life (Tunçay Son & Bulut, 2019; Piia *et al.*, 2019). Veganism is more than a food regime; it is a lifestyle based on principles and

attitudes regarding animal and environmental protection (Mintel Press Office, 2016). Veganism is a process of communication that expresses strong standards/values concerning animal welfare and conservational behavior (DaSilva *et al.*, 2019).

Vegans typically practice this lifestyle due to ethical beliefs, health reasons, and environmental motivations. Deeply linked to animal rights activities, vegans aim to eradicate animal cruelty and abuse (Hopwood, Bleidor & Schwaba, 2020). The number of individuals that cease the ingestion of meat and/or fish is increasing, mostly due to moral issues, though the majority of individuals have no reservations when it comes to eating meat (Linzey & Linzey, 2019). Wrenn (2019) states that those who advocate veganism want to stop all animal usage and cruelty towards animals, regarding food, entertainment, clothing, beauty products, and farming. Vegans not only refrain from eating meat, fish or eggs, but also from using any kind of product made of animals or through the use of animals, for example leather clothing or cosmetics, and also products that imply the destruction of animal habitats (Wescombe, 2019).

There are vegans who select this regime due to health reasons (Dyett, Sabaté, Haddad, Rajaram & Shavlik, 2013), but mainly the reasons arise from the concern with animal welfare (Janssen *et al.*, 2016; Kerschke-Risch, 2015; Radnitz *et al.*, 2015; Wrenn, 2019). Radically driven vegans eradicate all products made of or with animals (Janssen *et al.*, 2016). For vegans, animal welfare means more than just the concern with animal well-being – it also regards life expectancy, living conditions, and psychological state (World Organisation for Animal Health, 2019.). Animal welfare covers also the rejection of animal testing (Olsson, Silva, Townend & Sandøe, 2016), and animal use in the entertainment industry (Shani & Pizam, 2008; Petrie 2016; Byrd, Lee & Widmar, 2017; PETA UK, 2018).

Veganism is now not only a healthy diet option, but also practices that influence and impact an individual's routine – a perspective that has been gaining attention in recent years (Doyle, 2016). Vegans do not simply eliminate meat or fish from their diets; they also wish to prevent overfishing, over farming, and to protect animals on the edge of extinction due to the loss of their habitat (Doyle, 2016). Vegans uphold a diet and lifestyle that is ethical and upholds the vegan values impacting both the individual and the ones surrounding them

(Grauel, 2016). Belasco (2007) distinguished three reasons for an individual to choose a diet: responsibility, individuality, and appropriateness. Responsibility is definitely a main reason for vegans, especially responsibility towards animals and the planet as a whole, other individuals, environment, and cultures and traditions. Identity and identification also pointed out by Belasco (2007) are essential to vegans' behavior. In a world predominantly populated by meat-eaters (Ciocchetti, 2012) the vegan individuality becomes vital. According to Ciocchetti (2012), the convenience mentioned by Belasco (2007) can easily be dethroned by identity, considering that identity is more important for vegans. Being vegan is more than being healthy by not consuming other living beings; it is displaying true distress about animal welfare and the environment (Mortara, 2013). Besides these motives, concern with society can also be crucial to vegan consumers, because the destruction of ecosystems doesn't affect only the ones who participate in conservational conducts (Greaves, Zibarras & Stride, 2013). Vegans are ecologically driven and choose goods that respect and protect ecosystems and wildlife (Honkanen, Verplanken & Olsen, 2006).

Some studies have focused on the reasons why somebody chooses to be vegan, but still, studies on veganism as a lifestyle are scarce (DaSilva *et al.*, 2019). Also lacking are studies about how vegans feel among the non-vegans – feelings of exclusion and misunderstanding aren't research topics (Earle & Hodson, 2017). Investigation shows that veganism is more than limiting food-intake; it is a choice that entails changes within a person's social life (Rosenfeld, 2018). Studies about what comprises being vegan are thriving, but differences between vegans and non-vegans or about the changes in a vegan's everyday-life have not been the subject of actual investigations (Pfeiler & Egloff, 2018). Moreover, investigations that state the effect of veganism on well-being are also narrow (Costa, Gill, Morda & Ali, 2019), as well as studies aiming vegans as consumers (Rex & Baumann, 2007). As stated by Cherry (2015) and Greenebaum (2012) vegan motivations are mainly based on individual and ethical motives. Greenebaum (2012) distinguishes vegans from other individuals due to their ethics, standards and ideals.

According to Greenebaum (2012) there are individuals that are vegans because of their moral values and principles. Vegans can choose veganism due to ethics, care, and

involvement in the animal rights movement. Next there are the environmental vegans, worried about the meat and dairy industry effects on the environment. Finally, the health vegans, who choose this way of life in order to improve and protect their health (Greenebaum, 2012).

The rising apprehensions concerning the environment and animal welfare have increased. Leading a lifestyle without the consumption of animal-based products is however more than a popular trend; it is a way of life, one that is difficult (Earle & Hodson, 2017). When choosing this lifestyle many people experience hardships (The Vegan Society, 2020). When implementing this austere lifestyle, vegans also need to avoid any type of animal products – not only food, but fashion and most medication (McDonald, 2000; Larsson, Rönnlund, Johansson & Dahlgren, 2003). The attractiveness of veganism is increasing (Montague, 2019), spanning from pro-environmental individuals and animal rights protection movements to movie stars, musicians, and other celebrities (Doyle, 2016). Despite being a rising lifestyle, veganism benefits from vegan celebrities spreading the word about its advantages. Celebrities also help by improving awareness and breaking stigmas (Greenebaum, 2012).

Preventing animal exploitation – a pro-animal movement – and the ethical concern about killing sensitive lives (Linzey & Linzey, 2019) – which entails the complete avoidance or at least respecting certain rules (Francione & Garner, 2010) – are the foundation of veganism and remain a challenging decision. According to Linzey and Linzey (2019) veganism is difficult because it is almost impossible to find products that were not tested on animals – being a strict vegan might therefore be quite difficult (Linzey & Linzey, 2019). Nevertheless, personal preferences such as palate can impact the path to veganism (Earle & Hodson, 2017). Generalizations and prejudice can also hinder true veganism (Greenebaum, 2012; Earle & Hodson, 2017; Linzey & Linzey, 2019; Gloor, Fronzetti Colladon, Oliveira & Rovelli, 2020; The Vegan Society, n.d.e). As a result, keeping this lifestyle requires moral strength and persistence. Therefore, having a social group to feel supported and understood helps vegans to keep motivated (Cherry, 2015). By consuming products that do not disrespect their principles, and by protecting both the environment and animals vegans are encouraged to go further (Honkanen *et al.*, 2006; Radnitz *et al.*, 2015; Wang, Zhao, Yin &

Zhang, 2017; Janssen *et al.*, 2016) and to more intensely search for eco-friendly vegan products (Arisal & Atalar, 2016; Lund, Kondrup & Sandøe, 2019). The eco-friendlier they buy; the more motivated they are to spread the word about veganism and live it to the fullest (Lund *et al.*, 2019).

2.1.2. Attitude towards veganism

Individuals' attitudes are the long-lasting evaluation about themselves, other individuals, things, and their surroundings (Kaiser & Byrka, 2015; Solomon, 2017). People's cultural background affects attitudes towards others (Nguyen, Johnson, Jeffery, Danner & Bastian, 2019), and their choices, topics, situations, and even objects (Solomon, 2017). Following the completion of assessment attitudes can be positive or negative (Fishbein & Ajzen, 1975). Besides being influenced by the cultural, familiar and educational backgrounds attitudes are also influenced by feelings, emotions, and information (Koklic, Kukar-Kinney & Vegelij, 2017; Meng & Choi, 2016). Attitudes portray data about how individuals see objects, products, and their surroundings (Newhouse, 1991). An attitude is "a psychological tendency that is expressed by evaluating a particular entity with some degree of favour or disfavour" (Eagly & Chaiken, 1993, p. 1). By including emotions, perception, knowledge, and insight attitudes can vary according to the gathered information or the state of mind (Han, 2015; Koklic *et al.*, 2017; Meng & Choi, 2016): love, pleasure, or happiness are examples of attitudes influenced by emotions (Rubin, 1970; Izard, 1977) And attitudes influenced by knowledge or insight can originate opinions (Drolet & Aaker, 2002). Motivational aspects can impact attitudes and behavior as demonstrated by the Theory of Planned Behavior (Ajzen, 1985). The disposition carried out to search for information that will result in an attitude helps individuals to feel positive, relaxed and calm (Fan, Chai, Deng & Dong, 2020), and triggers behavioral intentions (Ajzen, 1991).

It is essential to determine individual attitudes to understand the issues that influence performance. Attitudes are influenced by three factors that can change according to the individual's disposition (Ajzen & Fishbein, 1980). First, the cognitive component that is associated to the consumer's beliefs about a product. Secondly, the affective component, linked to feelings or emotional reactions to an object. Finally, the behavioral component,

that refers to the predisposition to reply in a certain way to an object or activity. Attitude is, therefore, what influences the development in choice-making, whether the assessment is positive or negative (Ajzen, 1991), though consumers assess a product based on how it makes them feel (Zablocki, Makri & Houston, 2019). This leads to a positive or negative attitude towards it. Efficiently finding information about a product gives the consumer a positive attitude regarding said product (Fan *et al.*, 2020; Salazar-Ordóñez, Rodríguez-Entrena, Cabrera & Henseler, 2018). Positive attitudes of consumers towards a product or service (Han *et al.*, 2017) lead to a solid purchase intention (Jaiswal & Kant, 2018). Attitudes are therefore important concerning consumer behavior. A confident attitude has more impact in a future and more persistent and resistant behavior over time (Fishbein & Ajzen, 1975; Rucker, Tormala, Petty & Briñol, 2014). Attitudes may be predictable if the individual beliefs are known, so companies and marketers should establish objectives clearly, aiming accurately their products towards the consumers (Fishbein & Raven, 1962). Attitudes also mean a positive or negative tendency to address a particular product (Han, 2015; Quintal, Lee & Soutar, 2010). Knowing the desired product leads to building attitudes and trust towards a specific product/service choice (Ajzen, 2001; Salazar-Ordóñez *et al.*, 2018).

Attitudes predict customer's behavior (Ferraz, Romero, Rebouças & Costa, 2017) by influencing their purchases (Basha, Mason, Shamsudin, Hussain & Salem, 2015; Ajzen, 1991), and are therefore crucial to understanding the customer's attitudes and behavior (Agag & El-Masry, 2016). The customers' decision-making process and behavior are explained by the Theory of Planned Behavior (Ajzen, 1991, 2001; Han, 2015; Fazio & Petty, 2007). Attitude impacts the customer purchase purposes (Prete, Piper, Rizzo, Pino, Capestro, Mileti & Guido, 2017) outlined by the customer's evaluation of the products properties (Zablocki *et al.*, 2019).

Selfless values also motivate individual attitudes and consumption patterns towards vegan products (Yadav & Pathak, 2016). According to Kates (2000), when individuals see that a brand has the same values regarding a subject of their concern, they are more likely to support and purchase that brand. Moreover, health concerns can influence individual attitudes towards green products (Kumar, 2019). Customers with eco-friendly behavior

reveal attitudes that match health and vegan products (Zanoli & Naspetti, 2002). According to Prakash & Pathak (2017), customers' attitudes are influenced by altruistic and egoistic values that lead them to buy eco-friendly. This means that vegans who chose this lifestyle because of health, taste, animal welfare, and/or environmental issues are predisposed to buy vegan products. Vegans are highly motivated individuals regarding their values and principles, and those motivations impact attitudes (Ajzen, 1991).

Both the products healthy ingredients and their benefits (Urala & Lähteenmäki, 2007; Dean, Lampila, Shepherd, Arvola, Saba, Vassallo & Lähteenmäki, 2012; van Kleef, van Trijp & Luning, 2005), as well as health choices, are important to obtain a positive attitude concerning vegan products (Prakash & Pathak, 2017; Kumar, 2019), and eco-friendly goods (Jaiswal & Kant, 2018). Measuring the consumers' environmental attitude and behavior is evocatively one of the most important matters concerning marketing (Bohlen, Schlegelmilch & Diamantopoulos, 1993), although the choice of not consuming meat is now more associated with attitudes of respect towards animal well-being and environmental impacts (Fiestas-Flores & Pyhälä, 2017; Rosenfeld, 2018). Influenced by vegans' attitudes and their purchasing decisions marketers are beginning to feel stimulated by veganism. Consumers need to feel content, comfortable, and happy before their attitude concerning a product is positive, and this is only achievable through products that respect vegan's principles and values.

2.1.3. Veganism and Tribalism: the social side

A tribe is composed of different individuals – age, sex, income – linked by a mutual interest (Cova & Cova, 2001, Moutinho, Dionísio & Leal, 2007). Individuals need to be with others that have the same values as them (McDonald, 2000). People are meant to live in groups where they can behave and think freely in order to feel acknowledged and understood, being therefore able to share mutual principles (Clark, Brittany, Bo & Ditto, 2019). Tribalism occurs in social micro groups where individuals encounter emotional relations, and mutual standards and philosophies (Veloutsou & Moutinho, 2009). As mentioned by McGee-Cooper (2005), the instinct to join other individuals is common and usual due to a need of belonging. Tribe refers to a sense of empathy, spirituality, and idealism (Cova, 1997). Tribes

share mutual principles and objectives (Cova & Cova, 2001), and together tribe members are able to feel understood and welcomed (Brignall & Van Valey, 2007). Tribe members are a cohesive group – no one is ever alone in their ideals, and they always feel supported by their fellow members (Cova & Cova, 2001). Tribalism promotes the sense of fitting in, of being with people that share the same values and beliefs (Cova, 1997; Jabar, 2003; Charrad, 2011). Purposes, compassion, or need establish bonds within a tribe (Maffesoli, 1996). The sense of well-being and identity are similar goals that justify being in the tribe (Cova & Cova, 2001). A tribe is therefore a social group made of people that have the same beliefs. Tribe members tend to be very loyal (Clark *et al.*, 2019), and are also influencers within their group (Cova & Cova, 2001).

Even though vegans can feel lonely because their family members and friends do not follow neither understand their lifestyle (Beverland, Wahl & Groot, 2015; Twine, 2017), vegan tribes offer support in a dominant meat-eating world (Clark *et al.*, 2019). Tribalism is linked to values (Shah, 2004), shared principles, need for stability, and it also disables insecurity. The need to belong to a group where similar thoughts reinforce their ideology is awakened in individuals by insecurity (James, 2006; Rosenfeld, 2018). In social circles, vegans feel personally attacked; therefore, veganism can cause stress during social events (Beverland *et al.*, 2015; Earle & Hodson, 2017; Rosenfeld, 2018). Due to diet restrictions vegans might feel tension amongst non-vegans (Beverland *et al.*, 2015; Twine, 2017), because veganism is perceived as a healthy diet, associated with animal welfare and environmental movements (Mortara, 2013). Social get-togethers about veganism appeal to a number of individuals, vegans and non-vegans, and happen now more frequently (Twine, 2017), flourishing at a similar rate as the growth of vegan food popularity (Martinelli & Berkmanien, 2018). Vegan food is everywhere – social networks, and political and cultural communications (Martinelli & Berkmanien, 2018). Due to the difficulties veganism conveys vegans are very supportive of other vegans (Cherry, 2006; Earle & Hodson, 2017). Those who choose a vegan lifestyle want in essence to disseminate its philosophy, demonstrating all the advantages of being vegan in order to get more supporters for this lifestyle (Cherry, 2006; Wills, 2016; Martinelli & Berkmanien, 2018). Being in a tribe is currently very easy – the Internet empowers movements around the world and veganism is no exception (Kiesler

& Sproull, 1992). Everything is quick and easy, everything has more impact, and tribes are linked and support each other easily (Cool, 2020).

Brand communities are formal and organized. On the other hand, brand tribes are more relaxed and freer (Veloutsou & Moutinho, 2009). Brand communities display their participation and passion concerning products or services (Muñiz & O'Guinn, 2001) and provide valuable data to marketers (Shen, Zhang & Zhao, 2016). Vegan tribes have a connection due to their passion and ethics; the participants are not just believers but also promoters (Veloutsou & Moutinho, 2009). While participation in and interaction with tribes generate the dissemination of principles and values (Meir & Scott, 2007), these factors also allow tribe members to support and defend their beliefs in different social groups (Cova & Cova, 2001; Arnould, Price & Zinkhan, 2004). Tribes share experiences, principles, feelings and know-how about products (Muñiz & O'Guinn, 2001; Baldus, Voorhees & Calantone, 2015; Shen *et al.*, 2016).

A tribal consumer is emotionally linked to a product or brand (Jurisic & Azevedo, 2011), and is influenced by the shared consumption decisions within the tribe (Cova & Salle, 2008). Individuals (whether in a tribe or not) tend to choose a product or service that represents more accurately, and respects, the tribe's ideals and passions (Escalas & Bettman, 2005; Moutinho *et al.*, 2007), and according to Ruane & Wallace (2015), these consumers show more loyalty to the tribe than to a brand. In social groups that privilege the community tribal marketing reveals higher expression (Veloutsou & Moutinho, 2009). Tribes need to be understood by marketers (Almeida, Simões, Silva & Bem-Haja, 2017) because tribalism influences consumers (Veloutsou & Moutinho, 2009). Fidelity towards the vegan tribe improves both involvement and attitude regarding vegan products (Tsiotsou, 2013; Taute & Sierra, 2014; Ruane & Wallace, 2015). Because it is driven by a social bond and influenced by the social network, tribal consumption is therefore inclined to interpersonal impact (Cova & Cova, 2001; Veloutsou, 2007; Tsiotsou, 2013; Taute & Sierra, 2014). Vegans focus on the duty towards the planet (Ciocchetti, 2012), and having strong social networks (Cherry, 2006) allows them to keep feeling motivated and supported (Cherry, 2015).

2.2 Conclusion and Final Remarks

Veganism is a lifestyle that has been growing year after year although it is extremely difficult to lead a routine where no animal products are involved (Wrenn, 2019). The meat-eating world is dominant; following a different path in life has been apparently very hard for vegan newcomers. Many reasons can lure someone to become vegan, whether health-related, when individuals are worried with what they put inside their bodies, or driven by animal protection or environmental causes (Rosenfeld, 2018). Many studies have shown that health awareness and environmental concerns are the main drives to become vegan but recent studies have revealed that individuals that are driven by animal protection movements or that simply care about animal well-being, or express a string worrisome about the planet tend to choose veganism as a way of life (Wescombe, 2019).

Vegans are highly ethical individuals, who possess strict guidelines to fulfil their lifestyle. One must not forget that vegans are consumers, and extremely involved consumers, since vegan products are not always easy to come by. So, it would seem that vegans' attitudes towards vegan products are rather important when trying to aim to these consumers. No matter what the aspect of life – food, clothing, hygiene or leisure moments – vegans chose products accordingly to their strict principles of no animal involvement of any kind. Extremely driven vegans will not watch a movie involving animals, nor listen to a song where the performer uses animal fur, nor buy a table made of wood from a forest where animals were left without their habitat. Attitude represents the information vegans have of things, goods, and settings (Newhouse, 1990).

Nowadays, veganism is attracting the attention of non-vegans, and they are apparently beginning to respect more those who choose this philosophy of life. Many vegans however still feel left out and misunderstood. In social situations – the company party, Christmas at a family home, or a friend's birthday in a restaurant – being a vegan can still result in sensitive moments. Ultimately it seems that being a member of a group or tribe helps vegans in social interactions; within the tribe they are not prejudiced by meat-eaters, and they are free to express themselves in a world dominated by meat consumption (Earle & Hodson, 2017).

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Chapter III - Methodology

3.1. Introduction

Chapter III refers to the guidelines regarding the development of these studies in order to accomplish the proposed goals. Choice and definition regarding the research methodology was in accordance with the aims and research topics.

In order to test the proposed research hypotheses, the investigations used a structured questionnaire to collect data from vegan groups on the social network Facebook. A total of 1097 questionnaires were collected. Structural equation modelling was used to test the proposed hypotheses and the moderation effects. A bibliometric analysis and three models were the basis of four papers already submitted for publishing on scientific journals. Consequently, this chapter is organized as follows:

- 1) Introduction, bibliometric analysis, and also objectives, metrics and methodology;
- 2) Investigation strategy: developed papers.

3.2. Bibliometric Analysis

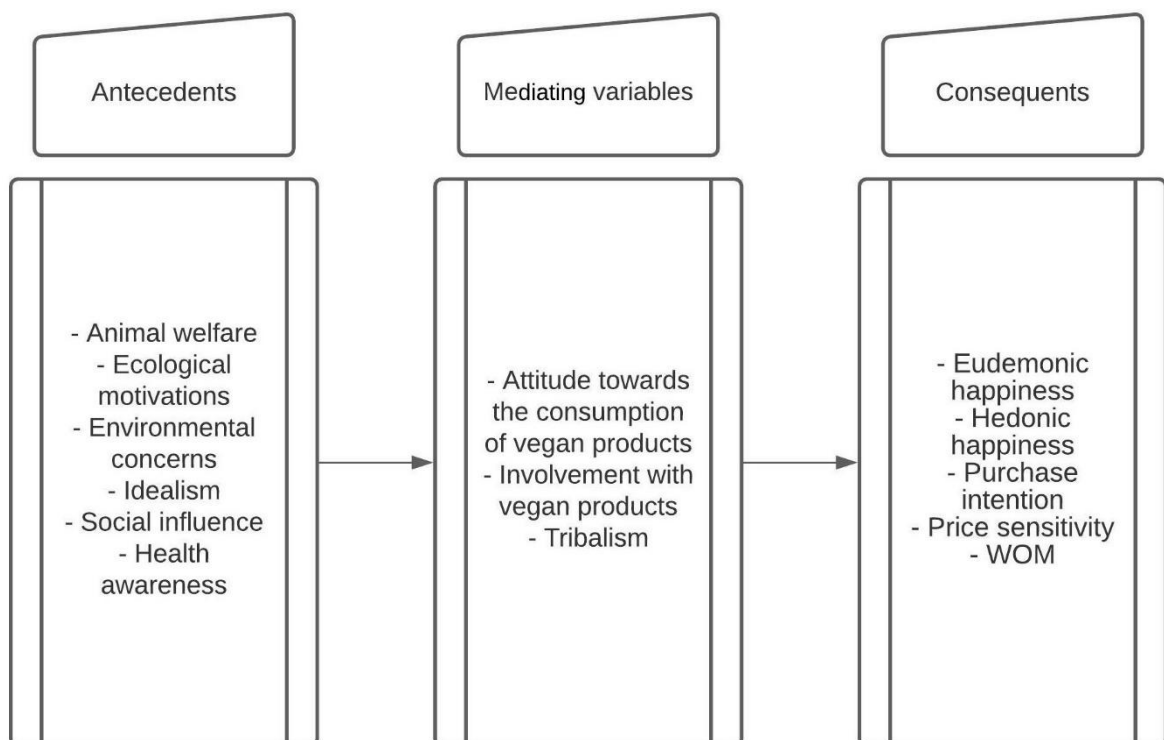
A study was performed to map academic publications on the subject, and the current intellectual knowledge of veganism – from health to customer behavior, bearing in mind past research and detecting possible research topics in the area of veganism. Therefore, a systematic literature review with a bibliometric approach based upon *VOSviewer* was completed, and maps in order to visualize fundamental intellectual structure are presented. Moreover, the primary purpose on analyzing top vegan publications was to reveal the main topics that emerge when talking about veganism. Second, publications regarding the area of marketing, consumption, and customer/consumer behavior were analyzed. The bibliometric study used the *WoS* database timeline until January 2021.

3.3. Global Conceptual Scheme and Research Objectives

The conceptual scheme (see Figure 1) represents the sequence of effects between antecedents, middle variables, and consequents regarding veganism in the area of marketing. The conceptual scheme articulates a set of hypotheses tested on a quantitative approach. This conceptual scheme was established, tested and validated through three different empirical sub models, originating three papers demonstrating the main idea of the whole research work.

Figure 1

Global conceptual scheme



The previous figure embodies the essential conceptions of this investigation, and states the progress of the underlying relationships, meaning the development of the research

hypotheses. The aim of this research is to contribute with data to the investigation model conceptualization, and the analysis of veganism and vegan products impacts.

In sum, the proposed objectives should answer the following questions:

- 1) What are the main research trends in veganism?
- 2) What influences attitude towards the consumption of vegan products?
- 3) What influences the involvement with vegan products?
- 4) What influences vegan tribes?
- 5) What influences involvement with vegan products regarding vegans and non-vegans?

In order to answer the set of proposed relationships regarding this global conceptual scheme, the partial and cumulative results were verified using three sub models corresponding to three empirical papers.

3.3.1. Research Instrument and Data Collection

In the statistical procedures the problem analysis was divided into the following stages: definition of the objective (questions for which answers are searched), design of a procedure for sample selection, data collection, data analysis, and inferences of conclusions about the population.

A questionnaire was completed using Google Forms to test the planned research models and hypotheses. The sampling was performed sharing the questionnaire on 4 Portuguese Facebook vegan groups with a total of 82,500 members, and 4 Brazilian groups with a total of 202,400 members. Between July 2019 and December 2019, 1,097 individuals answered the questionnaire. The individuals that answered the questionnaire can be classified according to a double criterion: nationality and being vegan or just followers. Therefore, we have two samples of 224 Portuguese vegans and 356 Brazilian vegans and also two other samples of 580 vegans and 517 non-vegans.

3.3.2. Sample Description

The studies are based on a total of 1,097 individuals. The first assessed question was if the respondent was a vegan or not. The majority of respondents are female, between 18 and 33 years of age, having a university degree, employed, and with an income level between 501€ and 1,499€ (see Table 1).

Table 1

Demographic profile of the respondents

Category	Vegans (580)	Non-vegans (517)	Portugal	Brazil
Male	70	65	31	39
Female	510	452	193	317
Age				
10-17	18	15	6	12
18 - 25	218	165	92	126
26 - 33	190	162	61	129
34 – 41	90	97	31	59
Over 41	64	78	34	30
Educational background				
Until 12 th grade	201	136	87	114
Higher education	379	381	137	242
Occupation				
Student/Student worker	158	194	74	154
Employed	282	287	128	154
others	68	36	22	46
Household members				
1 - 2	279	217	115	164
Over 3	301	300	109	192
Income				
Less than 500€	77	107	16	61
501€-1,499€	278	184	127	151
Over 1,500€	225	226	81	144

3.3.3. Measures

The questionnaire is based on tested scales, translated and adapted from past relevant literature. All the items were measured on a seven-point Likert scale (1 = strongly disagree

to 7 = strongly agree). Metrics can be found on tables 2, 3 and 4 identifying the origin of the metric and the standardized regression weights.

The measures were planned after revising the literature and adjusting scales that had already been developed and tested in past investigations confirmed in further research investigations. This adjusting included the translation from English to Portuguese, in order to be easily understood by the respondents. Tables 2, 3 and 4 present the metrics used and the origin of each scale:

Table 2

Antecedents

Constructs	Metrics
Animal welfare Adapted from Graaf, Van Loo, Bijttebier, Vanhonacker, Lauwers, Tuyttens & Verbeke, 2016.	1. Animals must be kept in their natural habitat. 2. It is important that animals can behave naturally. 3. I care about the welfare of animals. 4. Animals must not suffer. 5. The idea of a "natural environment" applies to both domestic and wild animals. 6. Companies must think about their profits, but also about animals. 7. Companies must think about animals as well as their market value and costs.
Ecological motivations Adapted from Yadav & Pathak, 2016.	1. It is very important that production of vegan products respect animal rights. 2. It is very important that vegan products have been prepared in an ecological environment. 3. It is very important that vegan products are packaged ecologically. 4. It is very important that vegan products have been produced in a way that does not unbalance nature.
Environmental concerns Adapted from Yadav & Pathak, 2016.	1. The balance of nature is very delicate and can be easily changed. 2. Human beings, when they interfere with nature, often cause disastrous consequences. 3. Human beings must live in harmony with nature to survive. 4. Humanity is abusing the environment. 5. Humanity was not created to dominate the rest of nature.
Idealism Adapted from Leonidou, Leonidou & Kvasova, 2013.	1. I respect the principles and universal values when doing judgments. 2. There are universal principles or ethical rules that can be applied to most parts of situations. 3. Regardless of circumstances, there are principles and overlapping rules. 4. We must prevent others from taking risks.
Social influence	1. My friends often recommend me vegan products.

Adapted from Varshneya, Pandey & Das, 2017.	<ol style="list-style-type: none"> 2. My friends usually go shopping for vegan products with me. 3. My friends often share their experiences and knowledge about vegan products with me.
Health awareness Adapted from Teng & Lu, 2016.	<ol style="list-style-type: none"> 1. I think about my health. 2. I am aware of my health. 3. I am aware of changes in my health. 4. I tend to be informed about my health. 5. I have responsibility for the state of my health. 6. I monitor my health status daily.

Table 3*Mediating variables*

Constructs	Metrics
Attitudes towards consumption of vegan products Adapted from Han, Wang, Zhao & Li, 2017.	<ol style="list-style-type: none"> 1. I am interested in knowing more about vegan products. 2. I would like to consider vegan products as one of my shopping choices. 3. I have a positive feeling when buying vegan products.
Involvement with vegan products Adapted from Teng & Lu, 2016.	<ol style="list-style-type: none"> 1. Vegan products are important to me. 2. Vegan products remain interesting to me. 3. I am concerned about animal issues. 4. I am very involved in finding and reading information about vegan products.
Tribalism Adapted from Zhou, Zhang, Su & Zhou, 2012.	<ol style="list-style-type: none"> 1. I would feel a loss if the vegan community did not exist more. 2. I really care about the destiny of the vegan community. 3. I am very loyal to the community vegan. 4. I intend to maintain the relationship that I have with the vegan community. 5. The relationship I have with the vegan community is important to me.

Table 4*Consequents*

Constructs	Metrics
Eudemonic Happiness Adapted from Ryan & Deci 2001.	<ol style="list-style-type: none"> 1. Veganism helped me become self-determining and independent. 2. Veganism helped me have warm, satisfying, and trusting relationships with others. 3. Veganism helped me possess a positive attitude toward myself. 4. Veganism helped me feel there is meaning to present and past life. 5. Veganism helped me develop a lot as a person.

	6. Veganism helped me have a sense of mastery and competence in managing the environment.
Hedonic happiness Adapted from Van Boven & Gilovich, 2003.	1. Veganism increased my overall life satisfaction. 2. Veganism contributed to my overall happiness. 3. Veganism has improved my overall well-being.
Purchase intention Adapted from Teng & Lu, 2016.	1. I am happy to buy vegan products. 2. I hope to consume vegan products. 3. I would buy vegan products. 4. I plan to consume vegan products. 5. I intend to buy vegan products in the next few days.
Price sensitivity Adapted from Ramirez & Goldsmith, 2009.	1. I am willing to buy vegan products even if I think they will have a high cost. 2. It is worth spending money on buying vegan products. 3. I don't mind spending money to buy vegan products.
Word of mouth Adapted from Carroll & Ahuvia, 2006.	1. I recommend vegan products to many people. 2. I tell my friends about vegan products. 3. I try to spread the benefits of vegan products. 4. I do a lot of positive advertising for vegan products.

3.4. Statistical Approach

The data collected in the study database was submitted to an adjusting procedure. In order to determine how and to what extent the observed items are related to the underlying factors (Byrne, 2010), and to inspect the variables unidimensionality, exploratory factor analysis (EFA) was performed. Using IBM SPSS software, version 25, EFA was directed. As a result, latent variables theoretically underlying the observed variables were pointed out, and patterns of correlations in new areas of manifest variables (Haig, 2010) were also revealed. Literature mentions that internal consistency should be determined beforehand, so to ensure validity of the research purposes Cronbach alpha coefficient was used to assess the strength of consistency, to determine if all items in this scale measured the same construct.

3.4.1. Structural Equation Modelling

Structural equation model (SEM) is a statistical modelling technique that combines a factor analysis and a regression path analysis (Hox & Bechger, 1999). According to Hair, Black, Babin & Anderson (2010), SEM is suitable to study dependency relations when variables have multiple dependent and independent relations. SEM is used in academic research

worldwide and it is adequate for studies in social sciences due to its methods and data (Bowen & Guo, 2011), and because it allows the combination of linear regression and confirmatory factor analysis (Ecob & Cuttance, 1987). A conceptual scheme or model is the starting point to develop various hypotheses and SEM allows testing these proposed hypotheses. This method allows representing, estimating, and testing a theoretical network of linear regressions between variables (MacCallum, 1995). In other words, SEM allows the comprehension of correlation/covariance patterns between variables and explains variance of the identified model (Kline, 2011).

SEM is now used to determine the significance of the analysis, because it allows multiple testing – especially confirmatory factor analysis (CFA) –, uses numerous statistical tests to determine the model fit, and it is suitable to the collected data. CFA permits the testing of hypotheses and the connection between the observed variables and underlying latent constructs (Harrington, 2009).

3.4.2. Specification, Identification, and Estimation of the Conceptual Model

When using SEM a specific theoretical model is applied, stipulating a theoretical model into a path diagram of causal relations; in other words into a set of structural and measurement models (Ramlall, 2017). The study can lead to a set of conclusions as soon as the model fits and allows interpretation (Joelle & Coelho, 2019). Then there is the need to identify distinctive parameters constructed on the sample's covariance matrix and the theoretical model (Byrne, 2010; Kline, 2011; Ramlall, 2017). After model fit and identification it is necessary to estimate the proposed model (Ramlall, 2017). The maximum likelihood method estimation estimates parameters of prospect distribution so that the data and statistical model is possible. Samples should have 200 or more observations in order to obtain estimates for the parameters that may be useful, and to minimize error (Hinkin, 1998).

3.4.3. Construct Validity and Reliability

Regarding construct validity and reliability, validity examines how an item essentially does in relation to other variables; in contrast, reliability observes that a set of items all measure the same underlying construct. Construct validity means that the used constructs are truly measuring the phenomenon. In other words, validity aims to examine the extent to which the chosen metrics measure the intended concept (Streiner, Norman & Cairney, 2015), showing that the set of metrics in a construct are correlated, and that it measures the intended phenomenon and not something else (Cronbach, 1951).

According to Ahmad, Zulkurnain & Khairushalimi (2016), there are three types of validity: convergent validity, construct validity, and discriminant validity. Convergent validity occurs when all items in a measurement model are statistically significant, verified through Average Variance Extracted (AVE), where the value should be higher or equal to 0,5 (Bollen, 1989; Marôco, 2014; Ahmad *et al.*, 2016). Regarding construct validity, the model fitness indexes must achieve a level of acceptance: Incremental Fit Index (IFI), acceptable when $> 0,90$; Tucker-Lewis Index (TLI), acceptable when $> 0,90$; Comparative Fit Index (CFI), acceptable when $> 0,90$; Root Mean Square of Error Approximation (RMSEA), acceptable when $< 0,08$; and Chi Square/Degree of freedom (χ^2/df), acceptable when $> 0,90$. Discriminant validity is reached when the measurement model is free from redundant items; the square root of Average Variance Extracted (AVE) for the variables should be higher than the correlation between the respective constructs, and the correlation between pairs of latent exogenous variables should be less than 0.85 (Hair, Hult, Ringle & Sarstedt, 2014; Ahmad *et al.*, 2016).

Usually, reliability is assessed through Cronbach's alpha, which assumes the metrics are internally consistent, leading to a systematic classification and identification of the individuals in question (Netemeyer, Bearden & Sharma, 2003; Marôco & Garcia-Marques, 2006). According to Ahmad *et al.* (2016), there are three principles to assess reliability: internal reliability, construct reliability, and AVE. Internal reliability is accomplished when Cronbach's Alpha value is $\geq 0,6$ (Taber, 2018). Construct reliability measures the reliability and internal consistency of the variables that represent the latent construct, and needs to be $> 0,5$ (Hair, Black, Babin, Anderson & Tatham, 2006) Finally, AVE represents the average

percentage of variation explained by the items in a construct, and requires $\geq 0,5$ (Taber, 2018).

3.5. Descriptive Analysis of the Variables

Table 5 shows the means and standard deviation concerning the replies collected in the framework of the investigation allowing a characterization sample's attitudes concerning the variables of the global conceptual scheme.

Table 5

Descriptive analysis

Variables	Vegans			Non-Vegans		
	N	Average	Standard Deviation	N	Average	Standard Deviation
Animal welfare	580	6,7392	,41480	517	6,6668	,48733
Ecological motivations	580	6,7116	,70077	517	6,7693	,47883
Environmental concerns	580	6,8052	,40418	517	6,7675	,47236
Idealism	580	5,9647	1,01672	517	5,9052	,97235
Social influence	580	3,9713	1,75575	517	3,4977	1,85611
Health awareness	580	5,9672	,94620	517	5,8530	,93541
Attitudes towards consumption of vegan products	580	6,7270	,64173	517	6,4113	,98160
Involvement with vegan products	580	6,6289	,64874	517	6,2747	,98425
Tribalism	580	5,1721	1,54901	517	4,3265	1,68044
Eudemonic Happiness	580	5,2718	1,51505	517	4,3820	1,68515
Hedonic happiness	580	6,2770	1,03475	517	5,5255	1,51693
Purchase intention	580	6,7328	,58934	517	6,3660	,94987
Price sensitivity	580	5,8730	1,14609	517	5,5229	1,21706
Word of mouth	580	6,2138	1,04558	517	5,4637	1,53117

Student test for independent samples was preformed to test differences of means for the variables under analysis.

3.6. Investigation Strategy

Regarding the investigation strategy, conceptual models as well as gaps and future investigations are mentioned in the literature review. Conceptual models were established and examined as part of investigative and instrumentalist approaches.

The bibliometric review opened up clues for the research produced, based on a sample of vegans and non-vegans, and this led, in turn, to the division of research into three researches. The second research compares the impact of personal and moral determinants on veganism and using also idealism to investigate these relationships, comparing Brazilian and Portuguese respondents and the effects of national cultures. The third investigation compares the impact of personal and eco-motivated determinants on the willingness to be part of vegan tribe by using attitude towards the consumptions of vegan products as a moderator to study these relationships, and also comparing Brazilians and Portuguese and the effects of national cultures. The fourth and last links, the impact of personal and eco-motivated determinants by comparing vegan and non-vegans regarding the involvement with vegan products. It also studies how involvement with vegan products foresees consumer behavior patterns between vegan and non-vegans.

3.6.1. Paper 1

3.6.1.1. Title and Purpose

“Veganism: from health to customer behavior - a bibliometric analysis” was submitted to the *Journal of Environmental Policy & Planning* and is currently under review. The objectives of this paper are as follows:

- 1) To map academic publications on the topic and the intellectual data covering past research tendencies, and also to identify possible imminent research paths regarding veganism and customer behavior;

2) To detect main research tendencies, and their respective limitations and specific requirements for future investigation.

3.6.1.2 Design, Methodology and Approach

The bibliometric analysis performed aims for the understanding of how veganism is studied, and also how it is been perceived in the field of costumer behavior. In addition, it targets top vegan publications and main topics concerning veganism. Information for this bibliometric analysis, quotations, and number of articles data compiled by the Web of Science (WoS) databases was used. First, specific research questions were elaborated in order to pinpoint the research target, a review protocol was developed, and validation was ensued. WoS contains numerous of academic publications, authors, quotations, and affiliations. The period of analysis ranged from 1900 to 2021. Based on the defined keywords a sample containing 504 publications was obtained. In a second phase a review was conducted by identifying relevant research, selecting primary studies, accessing study quality, and finally extracting data from WoS. The WoS data was inputted into VOSviewer software using the 'full counting' method, which permits analyzing authors, organizations, countries, keywords, documents, sources, cited references, cited sources, and cited authors of all the documents. The results present the main trends concerning the main journals, articles, topics, authors, institutions, and countries.

3.6.1.3. Findings

The existing results show that information on veganism and costumer behavior is usually present in publications that are about vegetarianism and vegetarian consumers. The published papers focus on vegetarianism and costumer behavior; despite being mentioned, veganism and marketing aiming veganism is not the prime topic. Consequently, when studying veganism and vegan marketing, publications about vegetarianism must also be included in the research. The information from WoS clearly expresses the limited number

of publications that focus merely on veganism, costumer behavior and vegan marketing. Papers on vegan consumer/costumer behavior related to the purchase intention of specifically vegan products are still rare.

3.6.2. Paper 2

3.6.2.1. Title and Purpose

“Modelling Attitude towards Consumption of Vegan Products” was submitted to the *Sustainability* journal and was published on December 2020 after five reviews. This paper has the following objectives:

- 1) To understand the impact of both personal (health awareness and social influence) and moral (environmental concerns and animal welfare) antecedents on attitudes towards vegan products;
- 2) To understand the effects of attitudes towards vegan products regarding the involvement with vegan products, as well as the impact on purchase intention and word of mouth;
- 3) To introduce idealism as a moderator in the proposed relationships.

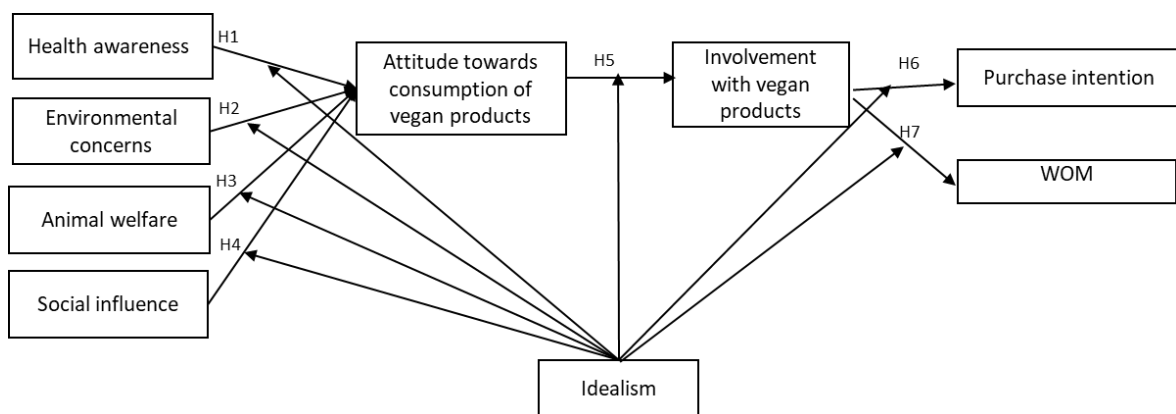
3.6.2.2. Design, Methodology and Approach

The study uses a structured questionnaire to collect information from two cross-sectional samples of 224 Portuguese vegans and 356 Brazilian vegans gathered from Facebook vegan groups. Structural equation modelling is used to test the seven proposed hypotheses and the moderation effects. After conducting a literature review and identifying gaps, structural equation modelling (SEM) and hypothesis test were performed using Amos 25. Covariance-based structural equation modelling is an appropriate technique to perform confirmatory

factor analysis and SEM regarding the sample size (560 respondents) and multivariate data normality. Metric invariance was tested, and a CFI difference below 0,01 was found in both models, supporting the expected metric invariance.

Figure 2

Conceptual model – Paper 2



3.6.2.3 Findings

Results demonstrate that attitudes towards veganism are not dependent of personal causes but more ethically-oriented. Motivations to decrease animal consumption, safeguard nature, and respect animal life appear to be steered by ethical principles. The moderating role of idealism appears to affect how environment and animals, impact on attitude towards vegan products, and it seems that these impacts are more visible in individuals with lower idealism. Regarding nationality, Portuguese respondents reveal higher impacts of the environment and animal welfare. Concerning the impact of the involvement with vegan products on purchase intention and WOM, Portuguese vegans show that attitudes turn easily into behavior. With regard to the differences between Portugal and Brazil, Portugal shows greater effects than Brazil according to the formulated hypotheses and results. These results might be explained due to some differences between the two countries.

3.6.3. Paper 3

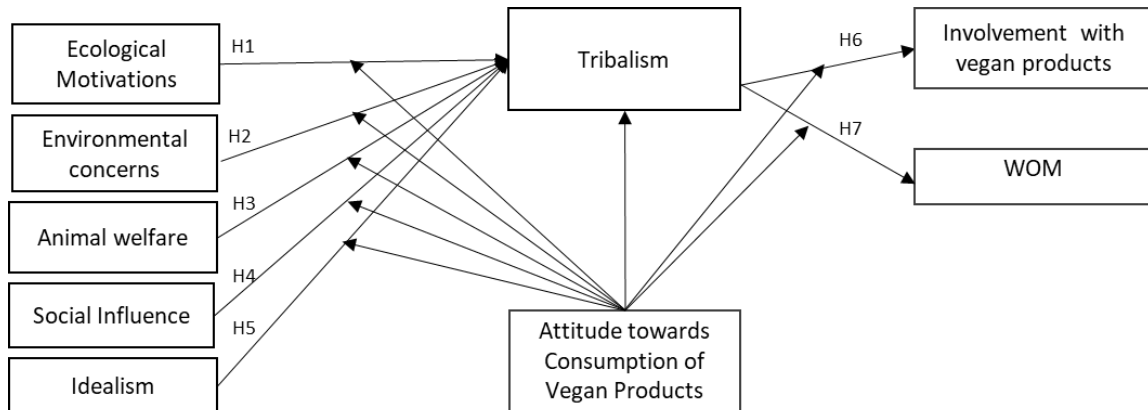
3.6.3.1. Title and Purpose

“Vegan tribalism: what pushes a vegan?” was submitted to the journal of *Agricultural & Environmental Ethics* and is currently under review. This paper has the following objectives:

- 1) To understand what influences the willingness to be in a vegan tribe;
- 2) To compare which antecedents influence vegan tribalism: eco-motivated or personal antecedents;
- 3) To describe the influence of vegan tribalism on involvement with vegan products and WOM;
- 4) To outline the moderating role of attitude towards the consumption of vegan products.

3.6.3.2. Design, Methodology and Approach

The investigation uses a structured questionnaire to gather information from two cross-sectional samples of 224 Portuguese vegans and 356 Brazilian vegans collected from Facebook vegan groups. Structural equation modelling is performed to test the seven proposed hypotheses and the moderation effects. First, a literature review is presented, and gaps are identified. Second, structural equation modelling (SEM) and hypothesis test were completed using Amos 25. Covariance-based structural equation modelling is a suitable method to accomplish confirmatory factor analysis and SEM, concerning the sample size (560 respondents) and multivariate data normality. Metric invariance was verified, and a CFI difference below 0, 01 was found in the two models, proving the expected metric invariance.

Figure 3*Conceptual model – Paper 3***3.6.3.3. Findings**

The results have shown that belonging to a vegan tribe is affected by ethical issues, ecological motivations, environmental concerns, and animal welfare. The necessity to be part of a tribe intertwines with the struggle to be accepted as a vegan, although social drives appear to be lacking. Tribalism has impact on involvement with vegan products and WOM, and is moderated by vegan attitudes. This study also compares the impact of personal and ecological driven factors on the disposition to be in a vegan tribe. Attitudes towards the consumption of vegan products moderate these relationships. Finally, the effects of the different national cultures between Brazilians and Portuguese are compared.

3.6.4. Paper 4

3.6.4.1. Title and Purpose

The fourth paper “Let’s be vegan? Antecedents and consequences of involvement with vegan products: vegan vs non-vegan” was submitted to the journal of *Journal of Environmental Policy & Planning* and is currently under review. The objectives of this paper are as follows:

- 1) To demonstrate that vegan values and products are not limited to vegan individuals;
- 2) To understand what influences the involvement with vegan products in vegan and non-vegan individuals;
- 3) To discuss eco-motivated antecedents, and personal antecedents influencing involvement with vegan products;
- 4) To describe how the involvement with vegan products impacts eudemonic and hedonic happiness, as well as purchase intention and price sensitivity;
- 5) To determine the impact price sensitivity has on purchase intention.

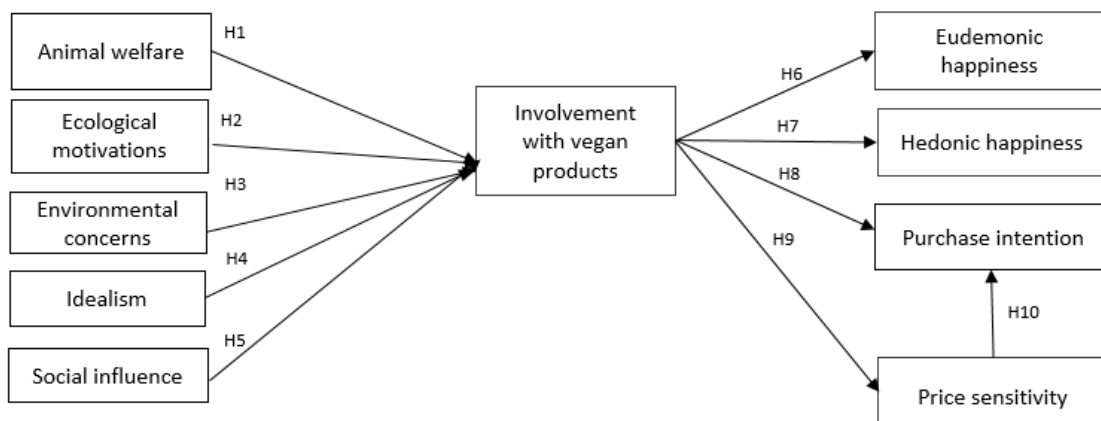
3.6.4.2. Design, Methodology and Approach

The study uses a structured questionnaire to gather data from two cross-sectional samples, 580 vegans and 517 non-vegans, shared in four vegan groups on Facebook, with a total of 284,900 members. Structural Equation Modelling (SEM) is used to test the proposed hypotheses. A confirmatory factor analysis was conducted to measure the scales psychometric properties and model fit using Amos 25. The model presents a good fit for both vegans and non-vegans. Composite reliability (CR) and the average variance extracted (AVE) were calculated. Scales presented values above 0,7 on CR and above 0,5 on AVE, and discriminant validity is maintained since all correlations between the constructs are smaller

than 1. The squared correlations calculated for each pair of constructs is smaller than the variance extracted, confirming the discriminant validity.

Figure 4

Conceptual model – Paper 4



3.6.4.3. Findings

Results show that ecological motivations and social influence do not influence involvement with vegan products among vegans. Ecological motivations are related to animal welfare, and vegan individuals are so because of their moral views, and not because others are vegan. Concerning non-vegans, idealism seems not to impact involvement with vegan products, possibly due to the fact that their ideological views are not as strong as among vegans.

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Chapter IV - Veganism: from Health to Customer Behavior - a Bibliometric Analysis

Abstract

Purpose: The present study aims to investigate how veganism and marketing are linked, especially consumer behavior matters, through a bibliometric analysis. Veganism is increasing; the number of vegans is increasing, as well, and the interest in this new market and in this new field of investigation is growing among academicians and practitioners. This bibliometric analysis aims to identify the main trends in the past literature to understand the links between veganism and marketing, as well as the gaps and opportunities for future research.

Approach: For this bibliometric analysis, the Web of Science platform (WoS) was used to gather the needed database between 1991 and 2020. Using VOSviewer software, the data was analyzed providing graphically eye-pleasing and useful colorful maps. The research words used were 'vegan' AND 'consumer OR customer OR attitudes OR consumption OR purchase', since these key words appear to capture the most relevant literature in the field of veganism and vegan-as-a-customer

Findings: The results show that the top published papers deal with vegetarian topics instead, and, although veganism is mentioned, it is not necessarily the prime topic. So then, when studying veganism, publications on vegetarianism must also be taken into account. The results reveal studies that mainly deal with the choice of veganism due to health-related issues and eco-friendlier motivations. Recent investigation adopts the vegan from a customer-approach to better capture the vegan consumer behavior.

Limitations and future lines of research: The data collected from WoS showed the limited number of publications that treat veganism as their main topic. Consumer/customer behavior related to purchase intention and purchasing in veganism are issues that have not been studied and are rarely mentioned, which is a field of investigation full of opportunities.

Originality: This study provides an understanding on how veganism is viewed by scholars and practitioners, showing the need to develop studies to understand vegan consumer behavior and identifying the respective limitations and specific opportunities for future research.

Keywords: vegan, consumer behavior, purchase intentions, bibliometric analysis

4.1. Introduction

In recent years, veganism has been rising as a lifestyle, although veganism has been the way of life of a minority (Ipsos, 2018). According to veganbits.com (2020) there are 75,300,000 vegans in the world. In its magazine '*The World in 2019*', *The Economist* published that this would be the "Year of the vegan" (*The Economist*, 2019), so undoubtedly veganism seems to have been rising as a lifestyle and trend, and marketers need to better understand this huge market and their customers, designing specific offers for this group (Ploll, Petritz & Stern, 2020).

A vegan is someone who does not ingest or use animal products of any kind (The vegan society, n.d.). The vegan diet is centered on plants, no animal products like meat or fish, dairy products or even honey (Piia *et al.*, 2019). Usually, vegans follow this lifestyle because of ethical, health, and environmental motivations. In league with animal rights movements, vegans aim to eliminate all practices of animal cruelty and abuse (Harmon, 2020). According to Wrenn (2019), vegans seek to eliminate all forms of use and cruelty towards animals for food, clothing or other purposes. So, being vegan is not only abstaining from eating animals, but also not using products made from animal sources, like clothing and make-up, and not using products that harm animal habitats (Wescombe, 2019).

Veganism is a very strict lifestyle, since all animal-derived products are excluded from all life areas (Tunçay, 2016; Piia *et al.*, 2019). While studies focus on the reasons why individuals become vegans, research about what veganism as a lifestyle choice entail is still limited (DaSilva *et al.*, 2019). Research shows veganism not only as a restrictive diet, but also as a choice that involves a social identity, and a change in customer behavior, where individuals tend to change purchase intentions in order to meet their new lifestyle (Rosenfeld, 2018). Some studies have shown what involves being vegan, but not the differences of vegans as customers (Pfeiler & Egloff, 2018). Also, research is still limited regarding the influence of a veganism lifestyle on attitude and consumption (Costa *et al.*, 2019b), as well as on purchase intention (Rex & Baumann, 2007).

Although there are a number of studies regarding veganism, studies on vegan consumers and their behavior seem rare. Usually, studies about veganism refer to health and

environmental benefits (Springmann, Wiebe, Mason-D’Croz, Sulser, Rayner & Scarborough, 2018; Rosenfeld, 2018; Vigiouliouk, Kendall, Kahleová, Rahelić, Salas-Salvadó, Choo, Mejia, Stewart, Leiter, Jenkins & Sievenpiper, 2019; González-García *et al.*, 2018) and also to the fact that the reduction of meat consumption is more a sustainable practice in regard to the planet (Sanchez-Sabate *et al.*, 2019). Therefore, there is an emergent interest in investigating this field of research for the purpose of determining prospects for empirical research, consequently allowing a better knowledge of this emergent lifestyle (Piia *et al.*, 2019; Vigiouliouk *et al.*, 2019). In the area of veganism, attitude and customer behavior towards vegan products is not yet a well-established research area (Norel *et al.*, 2014; Ploll, Petritz & Stern, 2020). Consumption that fits this lifestyle leads to new consumers, vegan consumers, and although research on veganism has increased over the last years, there are still insufficient studies focusing on entirely vegan consumers and on how they behave as customers (Braunsberger & Flamm, 2019).

In order to overcome gaps in the analysis, this bibliometric study intends to analyze the status of research regarding vegan consumption and customer behavior. Additionally, we aim to investigate recent developments in this field and provide guidance and a set of future research opportunities for those who are about to investigate this topic.

In order to collect data on the WoS, a group of terms was selected. The selected terms needed to capture relevant publications on veganism and vegan consumer behavior. After this process, Boolean filters were picked to sift out the needed publications, which were then uploaded to VOSviewer so that readable maps could be created. VOSviewer allows the construction of maps that establish connections and express visually appealing relations, and provide interesting analyses beyond the purely quantitative aspects.

Findings showed that, firstly, the most cited papers are not exclusively about veganism or about vegan consumers, having a strong influence of vegetarianism. Secondly, the most cited authors also usually mention vegetarianism and not exclusively veganism. Thirdly, vegan studies are about the reasons of becoming vegan, but not what being vegan implies. Fourthly, there are very few studies that show vegans as consumers and their behavior as customers. By providing this systematic review, this study shows that over recent years,

there has been some focus on veganism but not vegan consumers. The present study identifies, explores and systematizes the main subjects, which contributes to the expanding of the present literature.

The present study is organized as follows. After the Introduction section, Section 2 presents a theoretical background on veganism and the attitude to the consumption of vegan products. Section 3 describes the adopted methodology regarding the bibliometric approach. Section 4 presents the results of this bibliometric research and finally, section 5 presents a final discussion, main contributions and limitations.

4.2. Theoretical Background

4.2.1. Veganism

Veganism is more than a food regime; it is a manifestation of a lifestyle through food (Mintel Press Office, 2016). Veganism is a self-expression of identity and values (DaSilva *et al.*, 2019) that has gained more interest in recent years (Doyle, 2016). Besides being a healthy diet choice, veganism is also a lifestyle that entails a philosophy regarding animal welfare and ecological motivations (Doyle, 2016). Cherry (2015) and Greenebaum (2012) have studied vegan motivations, showing that personal and moral reasons are the main reasons to become vegan. Greenebaum (2012) identifies vegans according to their morals, norms, and values. Following an ethical diet and lifestyle is essential for vegans (Grauel, 2016). According to Belasco (2007), adopting a diet reveals three dimensions: responsibility, identity, and convenience. Although for vegans, responsibility is of great importance, identity and identification are also very important and can sometimes play an important role in vegan individuals (Ciocchetti, 2012). Continuing the vegan lifestyle is not only based on the individuals' ethical values, but it appears that having a supportive social group and consequent social identification is of great importance in order to keep vegans motivated (Cherry, 2015).

According to Novoselova *et al.*, (2005) animal welfare, environmental issues, and health have a positive impact on the customer's choice regarding food consumption. Therefore, following a vegan diet seems to protect the environment, since non-plant-based diets have

been proven to be harmful to the planet (Carlsson-Kanyama & González, 2009). In fact, individuals become vegan for various motives, health, food taste, avoiding animal driven products, etc. (Ciocchetti, 2012).

While being vegan is seen as being healthy (Mortara, 2013), the concern with the environment and society is central to consumers who engage in conservational behavior towards the environment (Greaves, Zibarras & Stride, 2013). Vegans choose products that respect both the environment and animals (Honkanen *et al.*, 2006), these individuals buy eco-friendly products (Radnitz *et al.*, 2015; Wang, Zhao, Yin & Zhang, 2017, Janssen *et al.*, 2016), and the more environment concerns get intensified (Arisal & Atalar, 2016), the eco-friendlier they buy (Lund *et al.*, 2019).

Although some vegans opt for this diet due to health reasons (Dyett *et al.*, 2013), authors pointed out the concern of animal welfare as being one of the main reasons to become vegan (Janssen *et al.*, 2016; Kerschke-Risch, 2015; Radnitz *et al.*, 2015; Wrenn, 2017). Extremely motivated vegans reject all animal-based products (Janssen *et al.*, 2016). Animal welfare is not only the concern with the animals' health and lifespan, but also with their physical and mental state (OIE, n.d.). Animal welfare also encompasses the avoidance of animal testing (Olsson *et al.*, 2016), and recreational situations using animals (Shani & Pizam, 2008; Petrie 2016; Byrd *et al.*, 2017; PETA UK Annual Review, 2018).

4.2.2. Attitude towards veganism

The individuals' cultural background influences their attitudes towards other individuals' choices, matters, environments, and even objects (Solomon *et al.*, 2017; Nguyen *et al.*, 2019). Attitude is a positive or negative evaluation of anything surrounding an individual (Fishbein & Ajzen, 1975), influenced by feeling and emotions (Koklic *et al.*, 2017; Meng & Choi, 2016). Attitude allows an understanding on how individuals choose products (Newhouse, 1991). When product information is effective, customers feel stress-free and relaxed leading to a positive attitude regarding products or services (Fan *et al.*, 2020). Attitude is, therefore, a central conception in clarifying a wide range of individuals'

decisions and behaviors (Ajzen, 1991, 2001; Han, 2015). Attitude also entails a positive or negative tendency to respond to a particular product (Han, 2015; Quintal *et al.*, 2010).

Attitude will influence behavior (Fishbein & Ajzen, 1975) and activate behavioral intentions (Ajzen, 1991). Attitudes are predictive of a customer's behavior (Ferraz *et al.*, 2017), influencing their purchases (Basha *et al.*, 2015; Ajzen1991), so it is crucial to understand customer attitudes, how they are formed and their impacts on behavior (Agag & El-Masry, 2016). The "attitude toward behavior" theory explains the customer's decision-making process, providing a better understanding of customer behavior (Ajzen, 1991, 2001; Han, 2015). Attitude will influence the individual's choice of a given product (Fazio & Petty, 2007; Priester, Nayakankuppam, Fleming & Godek, 2004), framed by the assessment of the product's properties (Zablocki *et al.*, 2019), therefore impacting the customer's purchase purposes (Prete *et al.*, 2017).

Literature shows that there are several factors that may influence attitudes towards veganism, mainly health concerns (Kumar, 2019) and eco-friendly values (Zanoli & Naspetti, 2002). According to Prakash and Pathak (2017), the customers' attitude is influenced by altruistic and egoistic values leading them to be eco-friendly, meaning that vegans that chose this lifestyle because of health, taste or animal welfare and environmental issues are predisposed to buy vegan products.

4.2.3. Customer behavior in veganism

Vegans express their ethical behavior through consumption (Stolle & Micheletti, 2013). The increase in vegan consumption will influence and change the food sector (Radnitz *et al.*, 2015). Vegan consumption is shifting consumer demands and businesses, and marketers need to adapt their viewpoints to the new consumption patterns (Grunert, 2006). Vegan consumption is related to animal welfare, environmental concerns, personal taste, and health (Janssen *et al.*, 2016), and the vegan market is rising and becoming lucrative (Radnitz *et al.*, 2015).

Consumer behavior studies show how individuals choose, purchase, and use products or services (Viksne, Šalkovska, Gaitniece & Puke, 2016). From the marketing point of view,

customer behavior initiates with understanding the stimulus-response mode, since it has a substantial weight in customers' purchasing decisions (Viksne *et al.*, 2016). Kotler's five-stage model shows five stages the customer has to go through: the acknowledgment of a need, searching information on how to fulfil that need, evaluation of the gathered information, purchase decision, and post purchase behavior (Kotler, 1997). Kotler's model acknowledges that there is a process before buying a product or service.

Customer behavior is studied by the Theory of Reasoned Action (TRA) and the Theory of Planned Behavior (TPB) (Fishbein & Ajzen 1975, Ajzen & Fishbein 1980). Fishbein and Ajzen's models are based on the idea that every individual makes a decision, taking into account logic, reason and motivation, and assessing existing information. Ajzen and Fishbein (1980) show that, in order to understand the factors influencing behavior, there is the need to verify the individual's attitude, which is influenced by three components: cognitive, affective, and behavioral. The cognitive component is associated with the consumer's beliefs about a product, the affective component is linked to the feelings or emotional reactions to an object, and the behavioral component is the predisposition to reply in a certain way to an object or activity (Solomon *et al.*, 2017).

Vegans' behavior as customers is linked to the awareness of the positive consequence customer behavior has on animal welfare, environment, and overall society (Kalte, 2020). Consumer behavior research allows understanding and predicting consumptions, purchasing motives, and purchasing frequency (Schiffman & Kanuk, 2004).

4.2.3.1. Intention to purchase vegan products

Purchase Intention is the disposition to purchase a product or a service (Fischbein & Ajzen, 1975; Luo, Chen, Chin & Liu, 2011). The purchase intention happens when the characteristics of a product or service meet what the customer needs and/or wants (Dodds, Monroe & Grewal, 1991). When the customers effortlessly find information regarding the product, they gain a positive attitude towards it (Fan *et al.*, 2020; Salazar-Ordóñez *et al.*, 2018). The purchase is activated by feelings, and in order to satisfy their need, customers search for information so that these needs can be fulfilled (Luo *et al.*, 2011). Therefore, when the customer has a positive attitude towards the product searched for, the purchase

is more likely to happen (Jaiswal & Kant, 2018; Han, Yu & Kim, 2019). Attitudes towards food products are of the utmost importance and influence purchases (Yadav & Pathak, 2017) through price (Wu, Lin & Hsu, 2011), trust (Gil & Jacob, 2018), and satisfaction (Abdoli, Rostamzadeh, Feizi, & Joksiene, 2017).

Environmental issues are relevant for consumers (Konuk, Rahman & Salo, 2015) and are extremely important in consumption patterns (Chang & Chen, 2013). According to Akehurst, Afonso & Martins (2012), environmental concerns lead customer behavior to eco-friendly products, and veganism is linked to ethical consumption behavior (Radnitz *et al.*, 2015). Therefore, highly environmentally involved customers tend to purchase eco-friendly products (Loebnitz & Grunert, 2018), based on previous experiences, judgments and values.

4.3. Methodology

This study is based on the collected data using the Web of Science (WoS) during the last six months of 2020 with the data analyzed in January 2021. The WoS presents one of the main collections of academic publications, making it possible to analyze and filter for needed information. The WoS allows the mapping of the publications, authors, citations, countries, and organizations that are publishing the most in the period of time set by the filter. Furthermore, bibliometric studies comprise numerous publications, citations, and authors, and the WoS gives access to research on various developing subjects (Du & Ke, 2017; Costa *et al.*, 2019a). Bibliometric studies allow access to scientific investigation regarding a precise research topic (Bakker, Groenewegen & Hond, 2011; Farias & Hoffmann, 2018) and also an understanding of gaps and future research topics (Serra, Ferreira, Guerrazzi & Scaciotta, 2018). According to Falcão, Ikeda and Campomar (2017), bibliometric research is easier to use compared to content analysis because it can analyze several relationships, such as keywords and citations between different studies, and the graphics and maps produced offer a more pleasing and easier way to present structured information. In this investigation, bibliometric analysis was performed, using mechanisms that analyze and interpret collected data (Garrigos-Simon, Narangajavana-Kaosiri & Lengua-Lengua, 2018). The emphasis in this study is to understand the publications that are related to the vegan

consumer and how marketing and management have studied this field and what the future trends in this field might be.

This study used the WoS database and VOSviewer software to present maps that allow a more comprehensive reading of all the data collected. The research terms used – ‘vegan’ AND ‘consumer OR customer OR attitudes OR consumption OR purchase – captured the most relevant publications about veganism and vegan consumer behavior. Concerning the research terms, other combinations were tested but they did not produce information relevant to the study. The chosen Boolean filters were for English and the types of documents, such as article, review, proceedings paper and early access, a stipulated timeframe (1900-2020), and the indexes SCI-EXPANDED, SSCI, ESCI, since these are the most relevant. The following categories were chosen in the WoS, obtaining a total of 504 results: nutrition dietetics OR food science technology OR environmental sciences OR behavioral sciences OR psychology multidisciplinary OR environmental studies OR green sustainable science technology OR public environmental occupational health OR sociology OR ecology OR sciences multidisciplinary OR agriculture multidisciplinary OR agricultural economics policy OR social sciences interdisciplinary OR economics OR development studies OR education scientific disciplines OR ethics OR education special OR psychology social OR anthropology OR business OR cultural studies OR ethnic studies OR humanities multidisciplinary OR communication OR management. Other combinations did not seem to bring up literature significant to our findings.

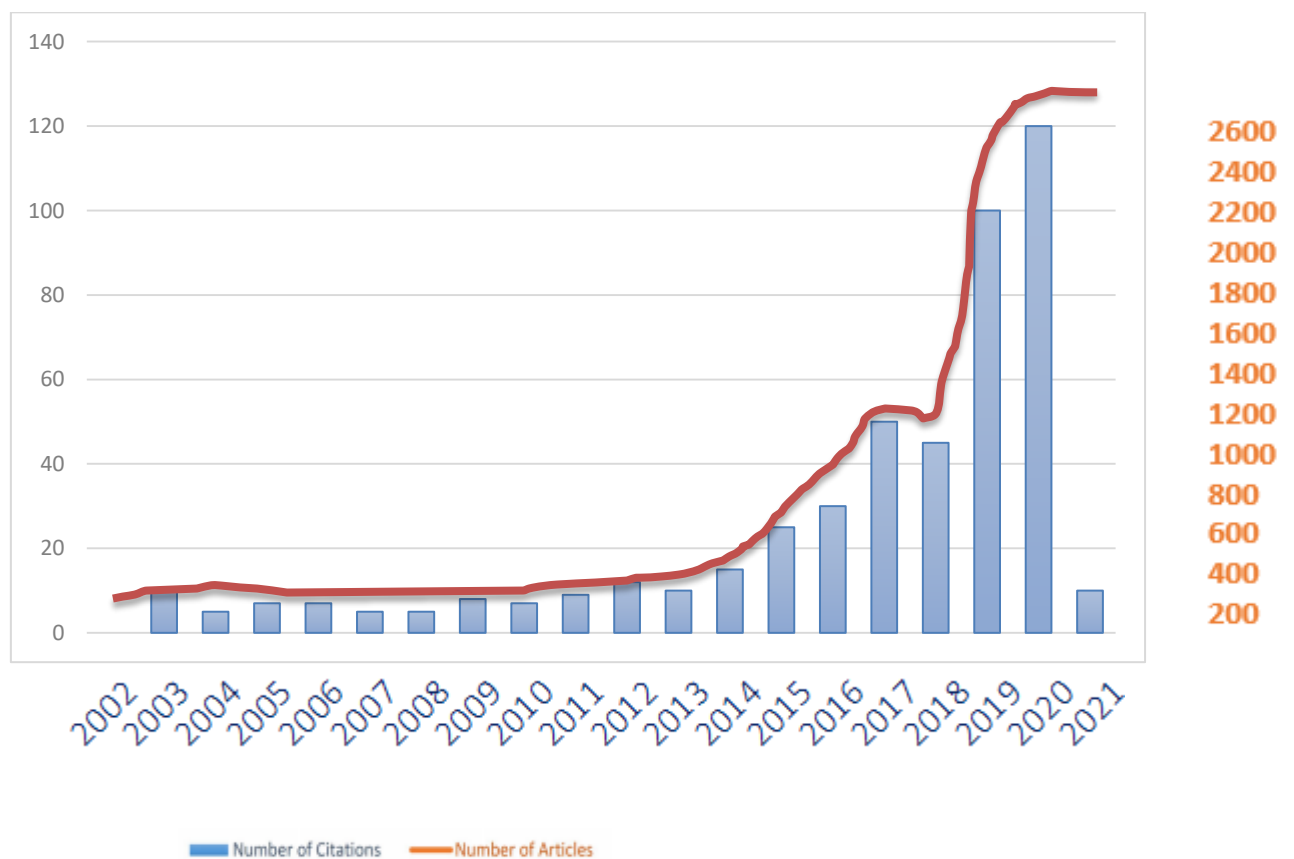
Using the WoS and VOSviewer, analytical standards were followed to analyze the data obtained. First, the WoS research phase, downloading the data covering references, author, title, source, and abstracts. Second, the VOSviewer software was used to explore the downloaded WoS data using the ‘full counting’ method to analyze authors, organizations, countries, keywords, documents, sources, cited references, cited sources, and cited authors on all the documents. The results showed the main tendencies regarding the main journals, articles, topics, authors, institutions, and countries.

4.4. Results

4.4.1. Evolution and data analysis on veganism and vegan consumers

The first analysis of the WoS database shows the evolution regarding the number of publications on veganism, consumer behavior, attitudes toward veganism, and vegan consumption. Graph 1 shows publications per year and the number of citations in each year. The sum of the number of citations is 10,845 and the average citations per publication ranges between 21 and 52. There is clearly an increased interest regarding the subject of veganism, and the growing number in publications has been rising significantly since 2019.

Graph 1 Number of articles and annual citations on veganism and vegan consumers



Source: Web of Science data (December 2020), <https://www.webofscience.com/>

Regarding annual productivity, Table 6 presents the annual number of publications between 1991 and 2020. The number of articles only rose above ten in 2012, with 13 articles, and in 2014, with 16 publications. From 2015 onwards the publications have been increasing; in 2019 there is an exponential growth up to 101 publications and in 2020 with 129; by January, in 2021, there were already 10 publications regarding veganism.

Table 6 Number of publications per year

Publication year	Number of articles	Publication year	Number of articles	Publication year	Number of articles
1991	1	2001	6	2011	8
1992	1	2002	4	2012	13
1993	2	2003	10	2013	10
1994	1	2004	2	2014	16
1995	2	2005	4	2015	25
1996	2	2006	4	2016	28
1997	0	2007	3	2017	50
1998	1	2008	3	2018	46
1999	5	2009	6	2019	101
2000	5	2010	5	2020	129
				2021	10

Source: Web of Science data (December 2020), <https://www.webofscience.com/>

Subsequently, to analyze the number of publications per year, a more detailed analysis was performed regarding the Web of Science categories. Figure 5 shows the categories that include most of the investigated topics on veganism and vegan consumers in the collected papers. The 504 publications are divided into a total of 43 categories, ranging from nutrition and environment, to sociology, ethics, business, and communication. Figure 5 represents the number of publications in the 25 categories and therefore provides an understanding of what is mainly published in the field of veganism. The category “Nutrition dietetics” is the main category with 228 publications. The second category is “food science technology”, with 106 articles. Categories such as economics, business, and management are lower: economics with 11 publications, business with 7 publications, and management with only 5 publications. These publications show that veganism has been approached more from

the health and nutrition perspective than regarding veganism as related to marketing and customer behavior, which seems to be a rising approach in this field.

Figure 5 Number of publications per category (1991 – January 2020)



Source: Web of Science data (December 2020), <https://www.webofscience.com/>

4.4.2. Journals with the largest number of published articles on veganism and vegan consumers

From table 7, it is possible to see the diversity of publications that address the topic veganism and the vegan consumer. This same table allows us to verify that the number of publications is vast, encompassing nutrition, sustainability, animal protection, and agriculture, among others. By analyzing the first 20 publications, and despite using WoS filters to select only studies correlating marketing and business issues with veganism and vegans as consumers, the results provided no eligible study, which shows the enormous gap identified by this study. The publications continue to be more focused on the nutritional aspects of vegans and on motivations than the analysis of the vegan individual as a consumer, on behavior, attitudes, motivations, and involvement with products and purchase.

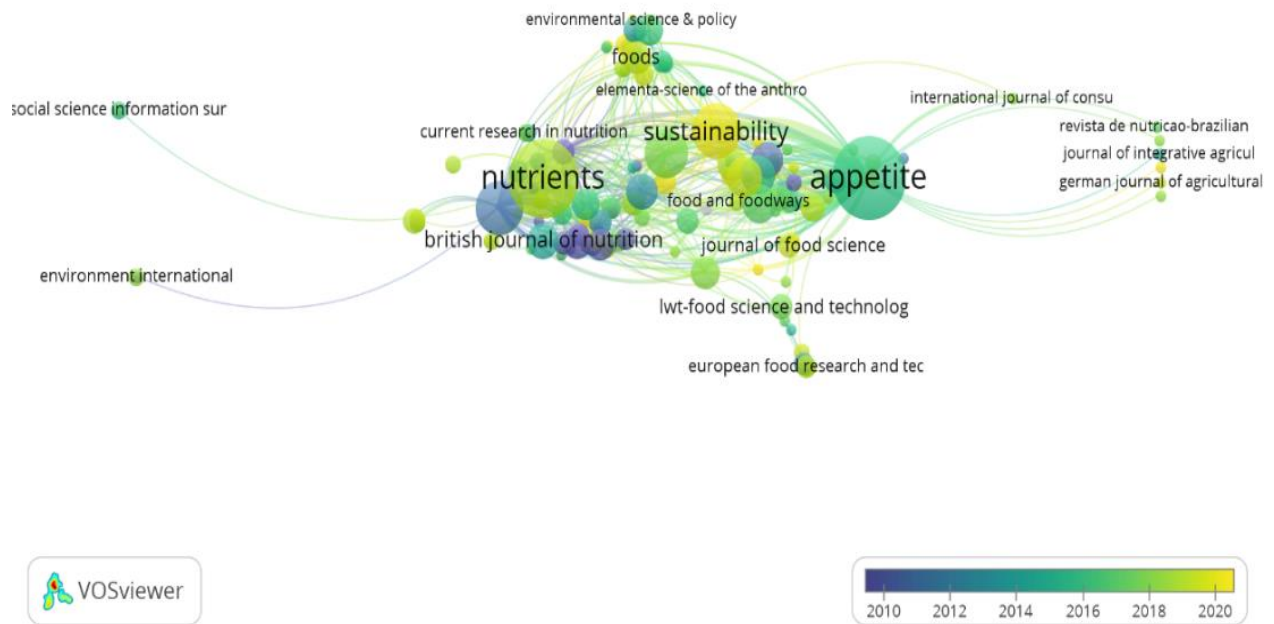
Table 7 Number of publications per journal (1991 – January 2020)

RO	Journal	Number of publications
1	<i>Appetite</i>	42
2	<i>Nutrients</i>	38
3	<i>Sustainability</i>	19
4	<i>American Journal of Clinical Nutrition</i>	18
5	<i>PLOS One</i>	15
6	<i>Food Quality and Preference</i>	10
7	<i>British Food Journal</i>	9
8	<i>Society Animals</i>	9
9	<i>British Journal of Nutrition</i>	8
10	<i>Journal of Agricultural Environmental Ethics</i>	8
11	<i>Public Health Nutrition</i>	8
12	<i>Critical reviews in food science and nutrition</i>	7
13	<i>Foods</i>	7
14	<i>Journal of nutrition</i>	6
15	<i>Society animals</i>	6
16	<i>British journal of nutrition</i>	5
17	<i>Journal of agricultural environmental ethics</i>	5
18	<i>Public health nutrition</i>	5
19	<i>Journal of cleaner production</i>	5
20	<i>European journal of clinical nutrition</i>	5

Source: Web of Science data (December 2020), <https://www.webofscience.com/>
 RO: ranking order

Figure 6 shows the overlay visualization mapping with the volume of publications by journal (1991 – January 2020), and highlighted by the eye-pleasing colors. The journals that have been publishing more in the latest years are *Appetite*, *Nutrients* and *Sustainability*. The number of publications reveals the tendency of veganism in the academic area, and more journals choose to publish articles in the field of veganism, tending to sustainability and consumption.

Figure 6 Overlay visualization map - Volume of publications by journal (1991 – January 2020)

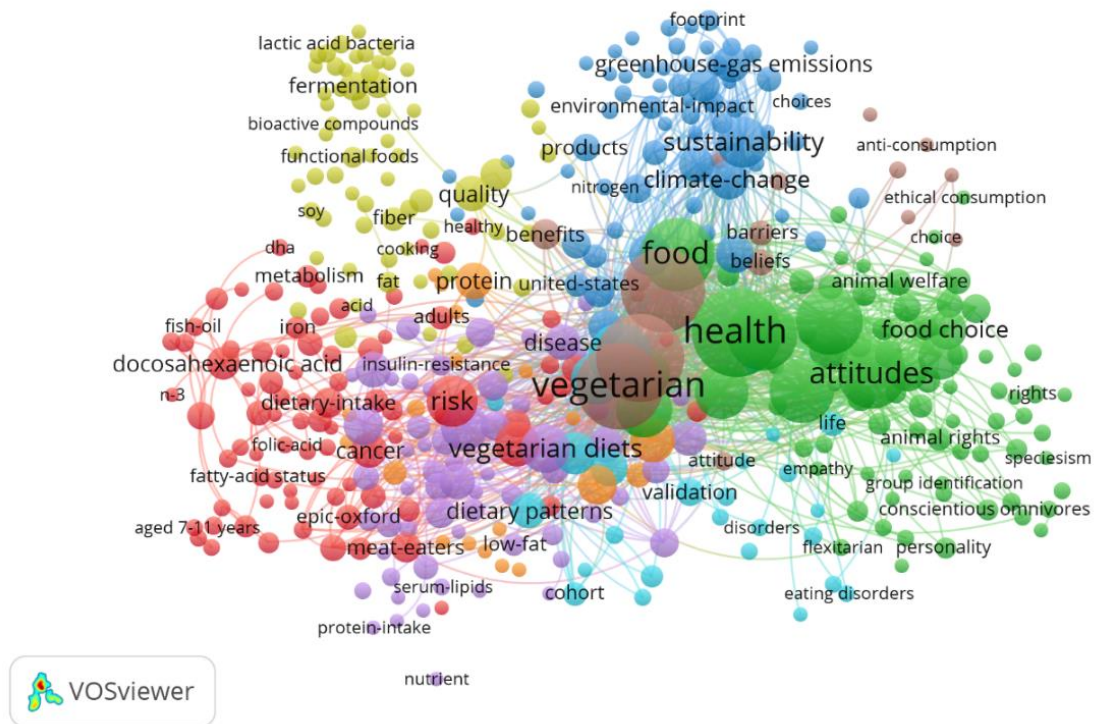


Source: Web of Science data (December 2020), <https://www.webofscience.com/>

4.4.3. Keyword analysis on veganism and vegan consumers

Regarding the co-occurrence analysis, this study used VOSviewer. A total of 2,705 words were obtained and only words with a minimum of 3 occurrences were selected (Figure 7). As a result, VosViewer illustrates the most studied areas regarding veganism and the vegan as a consumer.

Figure 7 Network map of connection between keywords (1991 – January 2020)



Source: Web of Science data (December 2020)
<https://www.webofscience.com/>

The clusters in table 8 and figure 7 are identified by colors and eight clusters are presented since these are the clusters with the most occurrences. The eight clusters are divided into different areas that grow around veganism: cluster one is related to health issues, the second cluster concerns the moral vegan life-style, namely animal welfare, the third cluster relates to consumption and behavior, the fourth cluster regards health benefits from veganism, the fifth cluster is about food intake and over-weight issues, the sixth cluster includes under-weight issues and is linked to emotions and wellbeing, the seventh cluster regards bone health, and the last cluster could be classified as issues related to consumption. Additionally, research on this last cluster seems to overtake the traditional approaches based on diet and animal welfare, in a tendency towards sustainability and consumption, bringing the vegan as customer to the heart of the investigation.

Table 8 The 15 most relevant items in each cluster (1991 – January 2020)

Cluster 1	Cluster 2	Cluster 3	Cluster 4
84 items	81 items	64 items	63 items
Risk	Activism	Biodiversity	Acid
Amino-acid	Animal advocacy	Carbon	Antioxidant
Antioxidant	Animal agriculture	Footprint	Bacteria
Bone-mineral density	Animal ethics	Choices	Breast-cancer
Cancer	Animal rights	Climate change	Food allergy
Cardiovascular risk-factor	Animal welfare	Consumer attitudes	Functional foods
Cholesterol	Animals	Dietary change	Tactic-acid bacteria
Dietary fiber	Behavior	Ecology	Legumes
Dietary intake	Choice	Emissions	Malnutrition
Education	Collective action	Environmental impact	Meat alternatives
Fatty-acids	Culture	Food choices	Microbial communities
Fish-oil	Discrimination	Waste	Plant foods
Folic-acid	Disgust	Food consumption	Probiotics
Health benefits	Moral	Future	Quality
Healthy	Motivation	Greenhouse effects	Stress
Cluster 5	Cluster 6	Cluster 7	Cluster 8
62 items	27 items	21 items	17 items
Acids	Adolescents	Bone mineral density	Anti-consumption
Health	Behavior	Calcium intake	Attitude
Animal protein	Anorexia-nervosa	Dietary	Barriers
Weight-loss	Anxiety	Fortification	Belief
Vegan diets	Depression	Fracture	Benefits
Vegetarian diets	Disorders	Lactose intolerant	Challenges
Vegetable protein	Happiness	Mass	Consumer behavior
Low-fat	Individuals	Osteoporosis	Consumption
Egg consumption	Life	Postmenopausal women	Cultured meat
Energy-intake	Life satisfaction	Selenium	Knowledge
Diet quality	Students	Serum 25- hydroxyitamin-d	Meat reduction
Food-intake	Quality of life	Vitamin-d	Stigma
Life-style changes	Orthorexia nervosa	Women	Vegan
Obesity	Validation	Dietary protein	Vegetarian
Overweight	eating disorders	Life-style	discourses

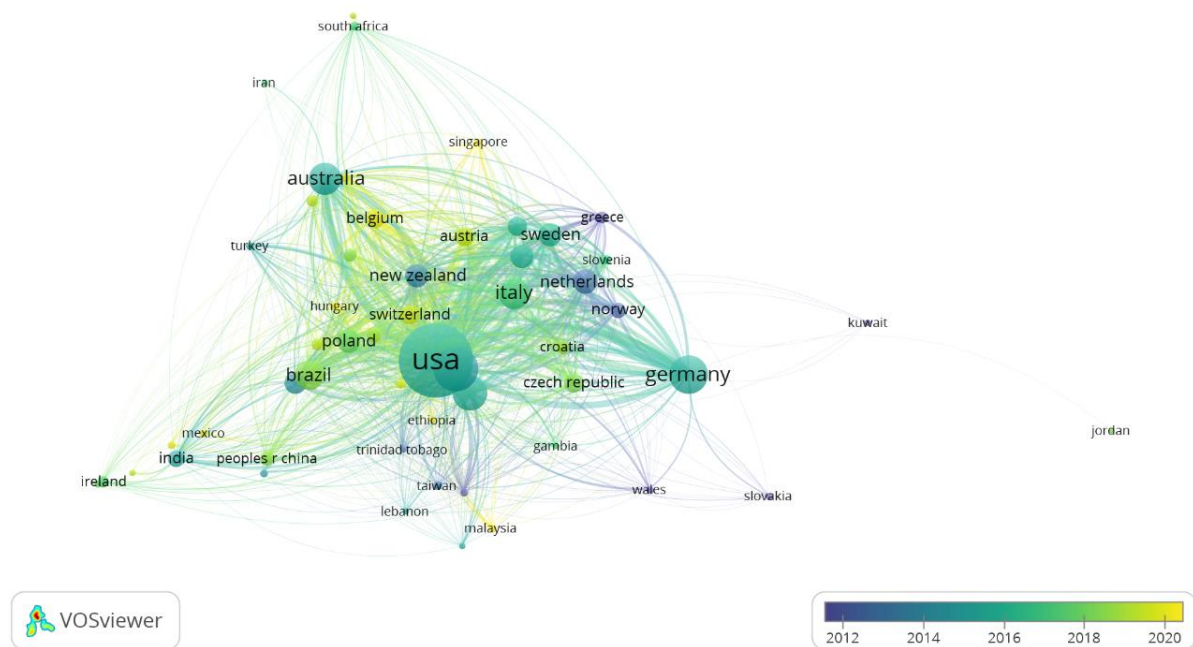
Source: Web of Science data (December 2020), <https://www.webofscience.com/>

4.4.4. Geographical analysis by country publishing on veganism and vegan consumers

Regarding the geographical analysis, the bibliographic coupling by countries is shown on figure 8. Veganism and vegan consumption are studied throughout the world, since the 504 publications collected are distributed throughout 65 countries around the world. A total of 65 countries were part of the initial database, and 59 remained with a strong relationship with other countries, using a 1 as the minimum number of documents and citations.

The United States (US) is the country with both the highest number of bibliographic coupling and the highest numbers of publications related to veganism and vegan consumers. The greenish color shows that US had the most publications around 2016 and 2017. Now it is possible to verify through the yellow color that the European countries – namely Belgium, Austria and Switzerland – are the ones with more bibliographic coupling and publications.

Figure 8 Bibliographic coupling by countries publishing on veganism and vegan consumers' category (1991 – January 2020)



Source: Vosviewer (December 2020)

By analyzing the links between the 10 clusters in table 9, generated by VosViewer it is possible to observe the strengths between countries from different continents. These clusters show that veganism and vegan consumers are studied throughout the world and are subjects of increasing interest. Clusters created by VOSviewer show Cluster 1 revealing that out of 11 countries, 10 are European and only one is from the Asian continent. Cluster 2 includes countries mainly from the South American continent but also 3 from the European continent and 1 from the Asian continent. The fifth cluster is exclusively from the

European continent, the eighth cluster just from the Asian continent, and the last cluster is entirely from the African continent. The different clusters presented demonstrate that the topic has a growing interest worldwide.

Table 9 Clusters of the countries publishing on veganism (1994 – January 2021)

Cluster 1	Cluster 2	Cluster 3	Cluster 4	Cluster 5
11 countries	11 countries	10 countries	7 countries	6 countries
Croatia	Argentina	Canada	Australia	Austria
Czech Republic	Brazil	Ethiopia	Belgium	Hungary
Denmark	England	Lebanon	Chile	Israel
France	Finland	Macedonia	Iran	Poland
Greece	India	Malaysia	New Zealand	Portugal
Italy	Ireland	North Ireland	Romania	Turkey
Netherlands	Mexico	South Korea	Switzerland	
Norway	Peru	Taiwan		
Singapore	Saudi Arabia	Trinidad Tobago		
Slovenia	Scotland	USA		
Sweden	Serbia			
Cluster 6	Cluster 7	Cluster 8	Cluster 9	Cluster 10
5 countries	2 countries	2 countries	2 countries	2 countries
Gambia	Egypt	Japan	Kuwait	Nigeria
Germany	Vietnam	Peoples R. China	Spain	South Africa
Jordan				
Slovakia				
Wales				

Source: Web of Science data (December 2020)
<https://www.webofscience.com/>

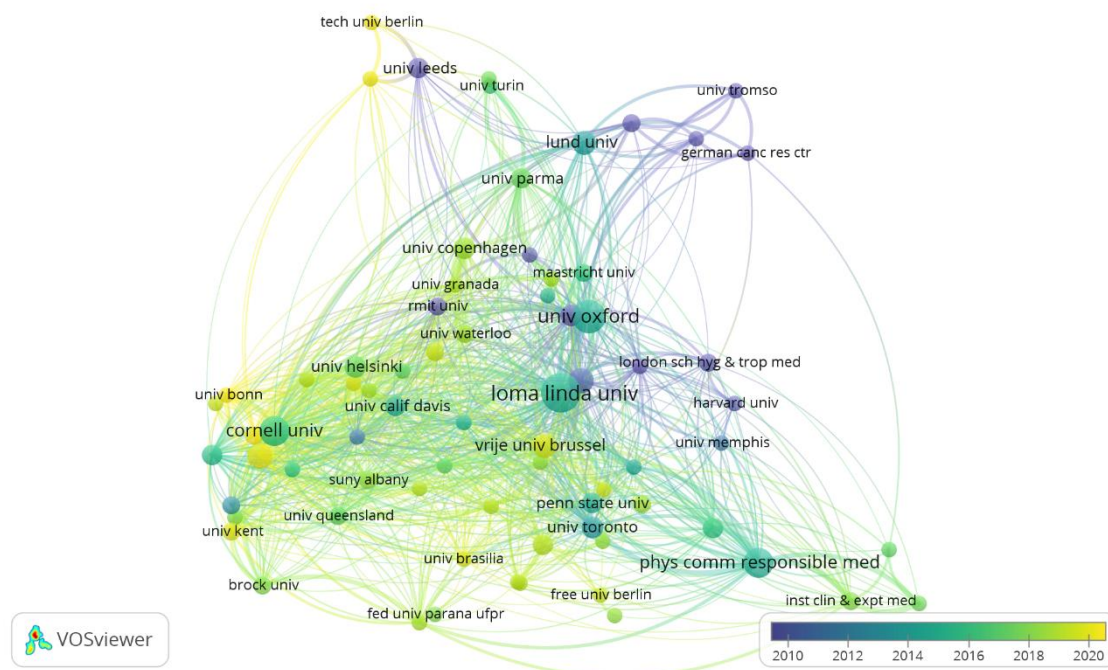
4.4.5. Analysis of Publications by Organization

Regarding organizations with the largest number of publications (see Figure 9), VosViewer identified 720 organizations. When selecting 3 as the minimum number of documents of an organization and citation, only 73 out of the 720 organizations met the threshold.

The analysis of publications by organizations reveals that the number of organizations that are publishing more is uneven, namely only five organizations published over ten studies. The university with the most publications is Loma Linda University with 20 publications, followed by the University of Oxford with 16 publications, then the University of California System with 13, Cornell University with 12, and the Physicians Committee for Responsible Medicine (PCRM) with 11 publications. The overlay visualization map shows that Loma Linda University published more between 2010 and 2015, and nowadays the University of

California (Los Angeles), and Vrije Universiteit (Brussels) have both the most recent publication, and most connections.

Figure 9 Organizations with the largest number of publications (1991 – January 2020)



Source: VOSviewer (December 2020)

Looking over the clusters of the publishing organizations on veganism and vegan consumption (see Table 10) it is possible to inspect the diversity of organizations and continents in clusters 1, 2 and 6. Regarding cluster 3 there is a clear participation of universities from US, UK and Italy. As for cluster 4 the majority of countries studying veganism is Nordic. The countries in Cluster 5 are mainly US, Brazil and Australia. The last cluster presented is from German-speaking countries.

Table 10 Clusters of the publishing organizations on veganism (1991 – January 2021)

Cluster 1	Cluster 2	Cluster 3	Cluster 4
24 items	15 items	13 items	9 items
Bellarmino University	Arizona State University	Andrews University	German Cancer Research Center
Brock University	Charles State University	Deakin University	German Institute of Human Nutrition
Cornell University	Karl Franzes University	Loma Linda University	Lund University
University Graz			

Monmouth University	Free University Berlin	London School of Hygiene & Tropical Medicine	Maastricht University
Poznan University Life Science	George Washington University	Rmit University	UMEA University
Suny Albany	Hebrew University Jerusalem	University Bologna	Copenhagen University
Swiss Fed. Institute Technologic	Institute of Clinical and Experimental Medicine	University Memphis	University Granada
Tufts University	Institute of Endocrinology	University Milan	University Oxford
University Adelaide	Penn State University	University Otago	University Tromso
University Bonn	The Physicians Committee for Responsible Medicine	University Parma	
University British Columbia	Stanford University	University Sydney	
University Calgary	University Guelph	University Turin	
University Calif Davis	University Helsinki		
University California Los Angeles	University Kent		
University Eastern Finland	University Postdam		
University Guelph	University South Carolina		
University Helsinki	University Toronto		
University Kent	Vrije Universiteit Brussel		
University Manchester			
University Melbourne			
University Padua			
University Queensland			
Victory University Wellington			

Cluster 5	Cluster 6	Cluster 7	
5 items	4 items	3 items	
East California University	Berlin Institute of Technology	University Giessen	
University Federal do Paraná	University Leeds	University Innsbruck	
Illawarra Health and Medical Research Institute	University of Natural Resources and Life Sciences	University Zürich	
University Brasilia	University Waterloo		
University Wollongong			

Source: Web of Science data (December 2020), <https://www.webofscience.com/>

4.4.6. Citations Analysis

The citation analysis is a technique that measures the impact of authors, journals, and papers, because the most-cited articles are considered the most important ones in a given research area (Mulet-Forteza, Martorell-Cunill, Merigó, Genovart-Balaguer & Mauleon-Mendez, 2018). Table 11 presents the 10 most-cited articles and it is interesting to see that in the most-cited publication regarding veganism, and using the WoS search, the contents

are more about vegetarianism than veganism, even though all these publications refer to vegan or veganism in their studies.

Table 6 also permits us to scrutinize the number of citations and establish relationships between the covered topics. Firstly, the topic about the overall health benefits of vegetarianism and veganism presents health advantages across all age groups and lifestyles, as well as benefits for various health issues. The advantages that a vegan diet brings to the individual proves to be very important and is covered by the first, fifth, seventh and ninth articles.

Secondly, the majority of these publications, namely articles 1, 2, 4 and 10, address this type of diet as being suitable for all ages and even for pregnant women, showing the importance of the beneficial nutrients present in the vegetarian and vegan diet. This second topic mainly mentions specific conditions that these diets can help to prevent, such as cardiovascular disease, diabetes, weight maintenance, and ischemic heart disease.

Also, as a dominant theme in these articles is the environmental benefits that these diets can bring. Results show that a protein-based diet produces double the GHG emissions of vegan diets and, therefore, plant-based diets reduce GHG emissions, concluding that vegetarian and vegan lifestyles are beneficial for the environment. This is a relevant subject as presented in articles 6, 8 and 9, showing that a semi-vegetarian diet can already be helpful for the environment.

Most studies mention differences between meat-eaters and vegetarians and proposes a wider analysis including western countries and gender. These differences between diets are proven to be important since they are mentioned in articles 3, 4, 6, 8 and 10. Besides these topics, the motivation to be vegan is also assessed, namely in publication 3.

This analysis concludes that, although this study filtered all research articles regarding veganism and the vegan as a consumer, the most-cited articles are related to vegetarianism, showing that this field of research still has few publications.

Table 11 The most-cited publications on veganism and the vegan as a consumer (1994 – January 2021)

RO	Title	Authors	Journal	Year	Citations
1	Position of the American Dietetic Association: Vegetarian Diets	Craig <i>et al.</i> (2009)	<i>JOURNAL OF THE AMERICAN DIETETIC ASSOCIATION</i>	2009	411

2	Mortality in vegetarians and no vegetarians: detailed findings from a collaborative analysis of 5 prospective studies	Key <i>et al.</i> (1999)	AMERICAN JOURNAL CLINICAL NUTRITION	OF	1999	296
3	Vegetarianism. A blossoming field of study	Ruby (2012)	APPETITE		2012	284
4	Investigations into the effect of diet on modern human hair isotopic values	O'Connell & Hedges (1999)	AMERICAN JOURNAL PHYSICAL ANTHROPOLOGY	OF	1999	261
5	Complementary Feeding: A Position Paper by the European Society for Paediatric Gastroenterology, Hepatology, and Nutrition (ESPGHAN) Committee on Nutrition	Fewtrell <i>et al.</i> (2017)	JOURNAL PEDIATRIC GASTROENTEROLO GY AND NUTRITION	OF	2017	233
6	Dietary greenhouse gas emissions of meat-eaters, fish-eaters, vegetarians and vegans in the UK	Scarborough <i>et al.</i> (2014)	CLIMATIC CHANGE		2014	208
7	Position of the American Dietetic Association and Dietitians of Canada: Vegetarian diets	Mangels <i>et al.</i> (2003)	JOURNAL OF THE AMERICAN DIETETIC ASSOCIATION		2003	187
8	The relative greenhouse gas impacts of realistic dietary choices	Berners-Lee <i>et al.</i> (2012)	ENERGY POLICY		2012	176
9	Exploring dietary guidelines based on ecological and nutritional values: A comparison of six dietary patterns	van Dooren <i>et al.</i> (2014)	FOOD POLICY		2014	164
10	The Oxford Vegetarian Study: an overview	Appleby <i>et al.</i> (1999)	AMERICAN JOURNAL CLINICAL NUTRITION	OF	1999	164

Source: Web of Science data (December 2020) <https://www.webofscience.com/>
RO: ranking order

4.4.7. Author analysis

Table 12 presents the ten most-cited authors. Perusing table 13, we see that Rosenfeld is the most-cited author of the 504 obtained publications. This author is affiliated with the University of California (Los Angeles), the eighth organization presented in figure 10. The second most-cited author is Fraser, affiliated with Loma Linda University in California, number one in the organizations list. Key is the third most cited, and Appleby is the fourth,

both affiliated with the University of Oxford, the second organization with most publications.

The next author is Jaceldo-Siegl, also from Loma Linda University in California, followed by Barnard, affiliated with the George Washington University School of Medicine and Health Sciences, which is not in the top 25 of the organizations that publish most. The next authors are Kahleova, affiliated with the Physicians Committee for Responsible Medicine, and Leitzmann from Giessen University, the seventh organization with the most citations. The following author is Leroy, affiliated with Vrije Universiteit (Brussels), the fifteenth organization with more publications, and Sabate is also affiliated with Loma Linda University in California.

Table 12 The most-cited authors (1994 – January 2021)

RO	Authors	Publications	% (of 504)
1	Rosenfeld, D.L.	12	2.381
2	Fraser, G.E.	10	1.984
3	Key, T.J.	9	1.786
4	Appleby, P.N.	8	1.587
5	Jaceldo-Siegl, K.	8	1.587
6	Barnard, N.D.	7	1.389
7	Kahleova, H.	7	1.389
8	Leitzmann, C.	7	1.389
9	Leroy, F.	7	1.389
10	Sabate, J.	7	1.389

Source: Web of Science data (December 2020), <https://www.webofscience.com/>

RO: ranking order

Figure 10 Ranking order of the organizations with the largest number of publications on veganism and the vegan consumer (1991 – January 2020)



Source: Web of Science data (December 2020), <https://www.webofscience.com/>

When comparing table 13 and table 12 we understand that the most-cited authors are not all part of the publications that are the most cited (see table 12). From the analysis of these tables, it should be underlined that authors Fraser, Key, and Appleby worked together in the second most-cited publication, and Key and Apple also worked in the sixth and tenth most-cited publication.

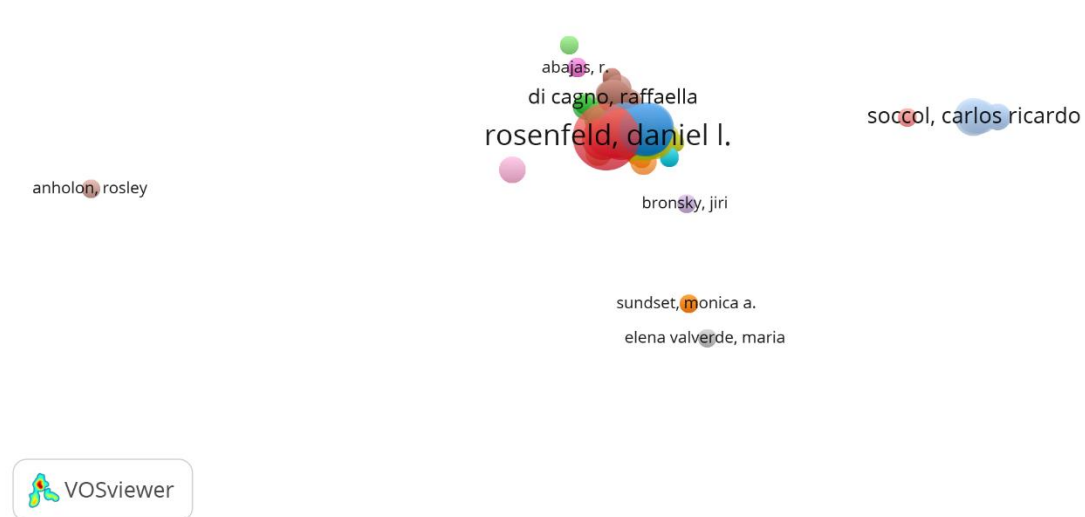
Table 13 Comparison between the most-cited authors and citations by articles (1994 – January 2021)

RO	Authors	Cited in the top 10 most-cited publications
1	Rosenfeld, D.L.	Not ranked
2	Fraser, G.E.	2 nd publication
3	Key, T.J.	2 nd , 6 th and 10 th publication
4	Appleby, P.N.	2 nd , 6 th and 10 th publication
5	Jaceldo-Siegl, K.	Not ranked
6	Barnard, N.D.	Not ranked
7	Kahleova, H.	Not ranked
8	Leitzmann, C.	Not ranked
9	Leroy, F.	Not ranked
10	Sabate, J.	Not ranked

Source: From Web of Science data (December 2020) RO: ranking order

Regarding the bibliographic coupling by authors (see Figure 11), 1 was selected as both minimum number of documents and minimum number of citations of an author; 1,532 met the thresholds, 990 items being the largest set of connection. Due to the overlay, it is only possible to visualize the author Rosenfeld, who has 587 links and 18,093 total link strengths with his 12 publications.

Figure 11 Bibliographic coupling by authors (1991 – January 2020)



Source: VOSviewer (December 2020)

4.4.8. Analysis of study opportunities

The most recent articles with the most citations between 2019 and 2020 were analyzed in order to understand the topics and trends in the study of veganism and its impact on consumers. A content analysis to understand the gaps and research suggestions that could be identified was performed and table 14 summarizes them.

The first line of research suggests studies where meat consumption clearly demonstrates its impact on the environment. In this way consumers become aware of their ecological

footprint and will be able to opt for more environmentally friendly diets. In this area, it is also suggested that guidelines be developed for consumers who opt for more sustainable diets, maintaining adequate nutritional needs. It also points to the need to clarify food safety for consumers in different diets (Springmann *et al.*, 2018; Poji *et al.*, 2018; González-García *et al.*, 2018; Sanchez-Sabate *et al.*, 2019; Kim *et al.*, 2020).

The second line of research refers specifically to the concerns regarding the reduction of meat consumption. Here, the needs to investigate methods to reduce meat consumption and its impact on individuals are identified. In addition, still in line with studies on the reduction of meat consumption, it is important to analyze the motivations and awareness of the need to reduce this consumption (Rosenfeld, 2018; Hodson & Earle, 2018; Sanchez-Sabate *et al.*, 2019).

The third line of investigation points to studies that classify geographic and cultural differences regarding meat consumption, vegetarian and vegan diets, and to understand how choosing a different diet can impact individuals socially and economically (Rosenfeld, 2018; Hodson & Earle, 2018; Sanchez-Sabate *et al.*, 2019).

A fourth line of investigation suggests studies in specific areas of health. Taking into account the changes caused by a diet, it is considered important to verify what impacts these changes cause in terms of health. The benefits that diets, such as vegetarian and vegan, can bring to individuals with specific pathologies must also be analyzed, as well as their well-being (McComb & Mills, 2019; Viguiliouk *et al.*, 2019; Iguacel *et al.*, 2019).

The fifth and final line of investigation concerns the comparison between vegetarians and vegans. Since, in most studies, there is a combination of these two types of diet and there is no clear distinction between them, there is a need to distinguish them, because, although neither consume meat, the motivations, behavior and lifestyle are different (Rosenfeld, 2018; Hodson & Earle, 2018).

Therefore, there is a shift towards sustainability and a change of customer habits, giving place to a vegan as a consumer and a customer, investigating the preferences and the drivers of this change. Research on veganism based on a marketing approach is therefore

one of the more promising areas, given the dimension and purchasing power of these markets.

Table 14 Study opportunities and further research in veganism and vegans as consumers

RO	Reference	Citations	Identified Gaps	Suggestions for further research
1	Springmann <i>et al.</i> (2018). Health and nutritional aspects of sustainable diet strategies and their association with environmental impacts: a global modelling analysis with country-level detail. <i>LANCET PLANETARY HEALTH</i>	138	<ul style="list-style-type: none"> - Association between environmental and health impacts - Participants that measure nutrient pass-through in high-consuming individuals instead of lower limits - National case studies from high-income countries - The health impacts of the sustainable-diet are not explicit 	<ul style="list-style-type: none"> - Include biodiversity impacts and economic aspects in sustainable diet studies
2	Poji <i>et al.</i> (2018). Eco-innovative technologies for extraction of proteins for human consumption from renewable protein sources of plant origin. <i>TRENDS IN FOOD SCIENCE & TECHNOLOGY</i>	64	<ul style="list-style-type: none"> - Eco-innovative technologies for extraction of proteins for human consumption - Consumer acceptance of food-grade insects 	<ul style="list-style-type: none"> - Food security and show benefits to consumers
3	Rosenfeld. (2018). The psychology of vegetarianism: Recent advances and future directions. <i>APPETITE</i>	62	<ul style="list-style-type: none"> - Identify growing subjects on vegetarianism and veganism 	<ul style="list-style-type: none"> - Identify political-ideology norms across various geographical and cultural regions - Perceptions of vegetarians and attitudes toward meat reduction - Comparisons between vegetarians and vegans - Examine how individuals build and keep various types of meat-reduced diets
4	González-García <i>et al.</i> (2018). Carbon footprint and nutritional quality of different human dietary choices. <i>SCIENCE OF THE TOTAL ENVIRONMENT</i>	59	<ul style="list-style-type: none"> - Studies focusing on the project of more environmentally sustainable food production chains highlighting the need to encourage more sustainable eating patterns 	<ul style="list-style-type: none"> - Develop steady and agreed-upon methods for estimating carbon footprint - Design nutritional quality scores to avoid discrepancies and reduce uncertainty in comparisons - Development of policies to guide consumers in the choice of a healthier and more environmentally sustainable diet
5	Sanchez-Sabate <i>et al.</i> (2019). Consumer Attitudes Towards Environmental Concerns of Meat Consumption: A Systematic Review. <i>INTERNATIONAL JOURNAL OF ENVIRONMENTAL RESEARCH AND PUBLIC HEALTH</i>	50	<ul style="list-style-type: none"> - Meat-reducers/ flexitarians have received little attention - Environmental concerns have been the motivation for changed meat consumption 	<ul style="list-style-type: none"> - Studies on how subjects would react to meat restriction - Studies on awareness, willingness, and change regarding meat consumption - Studies of the cultural differences regarding meat consumption and generalize cross-nationally - Studies on gastronomic and hedonistic dimensions of meat intake, cooking skills

6	McComb & Mills. (2019). Orthorexia nervosa: A review of psychosocial risk factors. <i>APPETITE</i>	42	- Studies on Orthorexia nervosa focusing only diagnostic criteria, and not psychosocial risk factors and correlates	- Studies where ORTO is not used to measure ON - Role of childhood experiences, familial factors, and exposure to mass media - Psychosocial risk factors for ON - Investigate ON in middle-aged and older adults, - How ON develops
7	Viguiliouk <i>et al.</i> (2019). Effect of vegetarian dietary patterns on cardiometabolic risk factors in diabetes: A systematic review and meta-analysis of randomized controlled trials. <i>CLINICAL NUTRITION</i>	40	- Guidelines with recommendations for vegetarian dietary patterns for diabetes management	- High quality randomized trials testing the effect of vegetarian dietary patterns on glycemic control and other established cardiometabolic outcomes - Randomized trials to assess cardiovascular disease, nephropathy, retinopathy, and mortality in people with diabetes.
8	Iguacel <i>et al.</i> (2019). Veganism, vegetarianism, bone mineral density, and fracture risk: a systematic review and meta-analysis. <i>NUTRITION REVIEWS</i>	34	- Identify risk factors associated with poor bone health and healthcare-related costs	- Differences in bone mineral density and fracture rates between pre- and postmenopausal women
9	Hodson & Earle. (2018). Conservatism predicts lapses from vegetarian/vegan diets to meat consumption (through lower social justice concerns and social support). <i>APPETITE</i>	34	- Understand the psychological factors why many people fail the commitment to avoid meat	- Comparison between vegans and vegetarians - Studies on different cultures regarding meat consumption
10	Kim <i>et al.</i> (2020). Country-specific dietary shifts to mitigate climate and water crises. <i>GLOBAL ENVIRONMENTAL CHANGE-HUMAN AND POLICY DIMENSIONS</i>	33	- Studies on promoting sustainable diets aiming benefits, the nutritional status and environmental impacts of each diet	- Research to measure the potential for soil carbon sequestration to reduce ruminant GHG - Research to examine dietary shifts in the context of social, economic, ecological, and agronomic feasibility, particularly in low- and middle-income population

Source: From Web of Science data (December 2020) RO: ranking order

4.5. Discussion, contributions, limitations, and suggestions for further research

4.5.1. Discussion

The present study not only makes a systematic analysis of the literature and allows an understanding of how the literature presents veganism and the vegan consumer, but also

suggests opportunities for future research. A bibliometric analysis is important in examining research gaps in this area of study and identifying tendencies. Besides identifying major publications, journals, and authors dedicated to veganism and vegan consumption, organizations and countries are also pointed out in this analysis.

The publications present the reasons to become vegan: health, animal welfare, or environmental issues. Health implications, effects of other diets on the environment, and the position of other individuals regarding veganism are studied and mentioned in this bibliometric analysis. However, the sustainability and consumption approaches are increasing in importance and attracting more and more attention (Kalte, 2020; Salazar-Ordóñez *et al.*, 2018).

The results presented indicate that, when searching about veganism and the vegan consumer as well as their involvement and attitude towards the consumption of vegan products, there are still few publications on these subjects. The marketing approach on consumption, regarding vegan products, has received little attention. As vegans represent a large and rising market, there is still not enough attention and importance given to these topics. The categories nutrition dietetics and food science are the most studied categories, with a total of 334 publications, and the field of economics, business and management is much lower, with a total of 23 publications. Therefore, veganism has been studied more in regard to health and nutrition, and not related to marketing and customer behavior.

The most-cited papers have shown that when studying veganism, researchers should include and not forget publications about vegetarianism, since this bibliometric study shows that all results with Boolean filters include the presence of this diet. This could be explained by the fact that these are diets that exclude animal protein, however, veganism goes far beyond a food regime. The study of veganism is still very focused on its vision related to food and health benefits, but it cannot be forgotten that the vegan is a consumer, who buys a product, gets involved with that product. In short, the vegan individual is also a buyer (Kalte, 2020; Salazar-Ordóñez *et al.*, 2018; Loebnitz & Grunert, 2018).

4.5.2. Contributions

This study is essential in understanding and interpreting data used by researchers on veganism and vegan consumption, as well as signaling areas that have been slightly overlooked. Despite all that has been investigated and written regarding vegetarianism, veganism is a field that has rarely been the main topic of papers, at least in regard to the papers mentioned and the most-cited authors. This research was motivated by the constant increase in veganism worldwide every year, and by the need to understand vegans as consumers, and consequently their behavior and attitudes in the consumption area. Therefore, this research contributes to five major issues:

Firstly, to a literature review and systemization on veganism and vegan consumption, bearing in mind that most studies are not entirely about veganism, therefore contributing to the expansion of the present literature.

Secondly, this investigation shows that studies are still about health and environmental benefits of meatless food regimes. Studies on vegan individuals where they are seen and understood as consumers and customers are still rare.

Thirdly, most of the research on veganism is about the reasons of becoming vegan, but not what being vegan implies. The vegan lifestyle is complex and entails several changes in order to embrace veganism and a shift in habits and consumption, giving rise to a huge market.

Fourthly, and in line with the previous point, studies on attitudes and purchase intentions of vegan individuals remain scarce. There is a lack of publications in the marketing area, where vegan individuals are analyzed as consumers, with their own purchasing behaviors. The vegan consumer behavior is influenced by lifestyle and restricted consumption options, which are deeply changing markets.

Finally, it provides an identification of possible future lines and investigation opportunities for those who are interested in veganism and in the way it is shaping consumption and markets.

4.5.3. Limitations

By probing the data from WoS, it becomes evident that the number of publications regarding only veganism or about the vegan as a consumer are very limited. Although there are several publications that focus on the study of veganism – and that do not mix it with vegetarianism – there are no major vegan studies in the marketing area. Furthermore, when going over consumer/customer behavior related both to purchase intention and purchasing in veganism, it becomes clear that much research is yet to be carried out.

Firstly, using the WoS database only can lead to a miscalculation of citation impact, even if we crossed information with other databases that did not increase the data collected.

Secondly, the WoS is excessively number-based, by counting citations in journals only covered by the WoS, and it does not count citations from all journals in the world.

Thirdly, bibliometric data in this kind of study is continuously updated, and the time frame between the collection date and the publication of the research can change.

4.5.4. Suggestions for Further Research

As mentioned before, the low rate of studies focusing on the marketing field in veganism makes them still rare. Papers focusing only on veganism, giving clear definitions of this lifestyle, working around attitudes and involvement with vegan products, or even concerning the reasons why an individual becomes a vegan are similarly rare. As a result of this analysis, it seems that publications related to only veganism and the vegan as a consumer are needed, since the most-cited articles are a combination of several diet patterns. So, as suggestions for further research, more studies should address the problems related to being a vegan when purchasing products adequate for this lifestyle. Also, as a proposal, studies concerning the social implications of being vegan can be useful, and this investigation provides a set of potential topics of investigation in this field.

4.6. References

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Chapter V - Modelling Attitude towards Consumption of Vegan Products

Abstract: This study proposes to understand the impact of personal (health awareness and social influence) and moral (environmental concerns and animal welfare) antecedents on attitudes towards veganism and its effects on the engagement with vegan products, along with the impact on purchase intention and WOM. Idealism is presented as the moderator of the proposed relationships. The study uses a structured questionnaire to gather data from two cross-sectional samples of 224 Portuguese and 356 Brazilian vegans, collected among Facebook groups of vegans. Structural Equation Modelling is used to test the proposed hypotheses. Results show that attitudes towards veganism do not depend on personal causes, but rather on moral concerns. Motivations to reduce animal consumption, protect nature and respect animal life seem to be determined by ethical reasons. This research compares the influence of personal and moral determinants on veganism using idealism as a specific context to investigate these relationships, comparing Brazilian and Portuguese respondents and the effects of national cultures.

Keywords: Vegan products, attitudes, involvement, vegan lifestyle, idealism

5.1. Introduction

The number of people who are vegan is increasing considerably, including in the Americas, Europe, and different regions of Asia (Earle & Hodson, 2017; Janssen *et al.*, 2016; Wescomb, 2019). In the past decades, researchers sought to understand how veganism is seen, approached, and understood by physicians, companies, and the non-vegan population (Raggiotto *et al.*, 2018). Veganism is more than a diet; it is also a lifestyle that has been growing every year. The impact that this routine has on buyers and sellers must be valued and studied. Even though vegans are few in number, the influence of veganism in the food market is growing (Raggiotto *et al.*, 2018). At an online bookstore such as Waterstones in September 2019 one would find 2,779 book titles with the word “vegan”. Going back just 1 year, in August there were only 994 book titles (The Vegan Society, n.d.). According to the Vegan Society website, “Veganism is a way of living which seeks to exclude, as far as is possible and practicable, all forms of exploitation of, and cruelty to, animals for food, clothing or any other purpose” (Sneijder & Molder, 2009). Being vegan is not only having a different diet; it also implies being aware of not consuming any products made of animals, for example, leather shoes or makeup tested on animals. Veganism refers to “a particular dietary style that entails eating only plant-based foods and abstaining from all animal products” (Sneijder & Molder, 2009).

Social context enables and stimulates vegan consumption; vegan consumption practices are shaped and are part of a rising cultural movement (Rosenfeld & Tomiyama, 2020). Additionally, some authors state that this particular diet selection is somehow multidimensional and energetic (Wescomb, 2019; Sobal, Bisogni & Jastran, 2014; Greenebaum, 2018). Therefore, sociocultural circumstances, individual preferences, and conditions influence people’s diet and choices. Therefore, it seems that people generally depend on an identity that tells them how to eat, and attitudes towards veganism can be analyzed by understanding consumer behavior through three determining factors that can affect daily actions: attitudes, subjective norms, and perceived control (Wescomb, 2019; Sobal *et al.*, 2014). The Theory of Planned Behavior (TPB) (Han, Hsu & Sheu, 2010) allows the verification of the influence that personal and social determinants have on behavior.

When it comes to effectively disseminating concepts and transforming attitudes into behavior the vegan philosophy is faced with difficulties (Wescomb, 2019). Therefore, it is difficult for new vegan movements to be clear and know how to spread their influence across different social groups. The study of veganism has sought to investigate why people become vegan, instead of identifying consumer segments in order to improve marketing actions (Wescomb, 2019). The skill to encourage the purchase of products and services that are organic, and ecologically and environmentally friendly, is a competitive advantage and leads to successful companies in this specific business area (Raggiotto *et al.*, 2018). The literature has however failed to reveal the complexity of the relationship between attitudes and beliefs regarding particular foods and an adopted diet (de Gavelle, Davidenko, Fouillet, Delarue, Darcel, Huneau & Mariotti, 2019). There is a need to understand the stigma in the context of other probable barriers that inhibit meat eaters from going vegetarian (Rosenfeld & Tomiyama, 2020). This specific market has not yet undergone enough studies explaining why people choose this food regime or why not, since some studies mention the difficulty of finding these products, the high prices, and difficult paths to transition from a meat diet to a vegan diet (Phua, Jin & Kim, 2019). To fill these gaps, this study intends to understand the impact of both personal (health awareness and social influence) and moral (environmental concerns and animal welfare) antecedents on attitudes towards vegan products and their effects on involvement with vegan products, as well as their impact on purchase intention and word of mouth (WOM). Idealism is considered to play a role in moderating the proposed relationships. This research is based on two samples, one with 224 Portuguese and another with 356 Brazilian respondents. Even though Portugal and Brazil are related countries, Hofstede identifies several cultural differences, like individualism, masculinity, and indulgence, which may influence attitudes towards veganism and its effects on the behavior of vegans (Hofstede Insights, n.d.).

This paper starts with an introduction that provides a brief overview of the study of the subject, mentioning gaps and the main objectives of the research. Afterwards, the study states the theoretical background, and develops the hypotheses and the conceptual model. Section 3 presents the method, Section 4 the theoretical background and hypotheses

development, and Section 5 introduces the results. The main contributions and limitations of this research are provided in Section 6.

5.2. Theoretical Background and Hypothesis Development

5.2.1. Attitudes towards Consumption of Vegan Products

Veganism supposes different attitudes towards the environment, food and health, and results from a great shift of attitudes from an old, traditional way of life to a healthy, ethical, and natural life (Greenebaum, 2018). Embracing a vegan lifestyle entails not using animal products or products tested on animals, such as cosmetics and detergents (Tunçay Son & Bulut, 2016). Understanding consumers' attitudes and behavior towards consumption of vegan products could clarify the decisions made by consumers (Ajzen, 1991).

Attitudes are predictive of the behavior of consumers, influencing their purchases (Ajzen, 1991). Understanding consumers' attitudes and behavior is, therefore, crucial to better deal with markets and customers. The "attitude toward behavior" (Theory of Planned Behavior) explains the decisions made by consumers and their behavior (Ajzen, 1991). Attitudes influence thought and the choice of a product, based on the consumers' assessment of product properties (Zablocki *et al.*, 2019); at the same time, attitudes have a significant impact on the purchase choices and decisions of the consumer.

People tend to evaluate everything — themselves, others, objects, and surroundings — on a permanent basis, and such assessment is generally influenced by their cultural background. Attitude denotes an individual's positive or negative evaluation of objects (Fishbein & Ajzen, 1975). It is a "psychological tendency that is expressed by evaluating a particular entity with some degree of favour or disfavour" (Eagly & Chaiken, 1993: 1), and includes emotional and cognitive elements — an emotional element being for example love, and a cognitive element being for example an opinion. Attitude denotes positive or negative feelings towards something (i.e., like and dislike of an object or activity) (Del Hawkins, Best & Coney, 2004). Attitude also represents the information that a person has

about another individual, a particular product, or even an object, and is also understood as feelings and beliefs about preparing the purchaser to behave steadily towards it (Fishbein & Ajzen, 1975).

Our assessment of an object, person, or surrounding establishes an attitude, influencing behavior (Fishbein & Ajzen, 1975) and activating behavioral intentions (Ajzen, 1991). The Theory of Planned Behavior (Ajzen, 1991) acknowledges that motivational factors could have an impact on behavior and attitude, followed by the amount of effort that individuals are willing to spend, and how far they would go to carry out an action. Some authors (Ajzen & Fishbein, 1980) believe that to obtain a good understanding of the factors that have an impact on behavior it is necessary to verify what determines the individual's attitude. Consequently, attitudes are influenced by three components, all equally important but changeable according to the motivation apropos the individual's attitude towards a specific subject/object. The healthy ingredients of products and their benefits, as well as health choices, are important to obtain a positive attitude towards green products and goods with green packaging (Jaiswal & Kant, 2018). Measuring consumers' environmental attitudes and behavior is evocatively one of the most important matters concerning green marketing. Nevertheless, the decision not to eat meat is more connected to attitudes regarding health and animal well-being rather than environmental impacts (Rosenfeld & Burrow, 2018). Therefore, health awareness and animal welfare are expected to have an impact on attitudes towards consumption of vegan products. Vegans have to stand by their choices and attitudes, since leading such a lifestyle is a crucial characteristic of their being. Vegans have a hard time being themselves in their social circles (Rosenfeld & Burrow, 2018).

5.3. Understanding Attitudes towards Veganism

5.3.1. The role of Health Awareness

According to the Oxford online dictionary, awareness is "a concern or interest in a particular situation or development" (Oxford University Press, n.d.). Therefore, if we add the word

“health,” we may say that health awareness, put simply, is one’s concern about one’s health (Teng & Lu, 2016; Fehér, Gazdecki, Véha, Szakály & Szakály, 2020). Gould (1990) conceptualized health awareness into four dimensions. Gould’s first dimension is related to one’s awareness of the factors that are a risk to one’s own health. Second, the dimensions that Gould mentions perceive health awareness as an inner state of mind, thus influencing concerns about health. The third dimension observes the relationship between health awareness and information about health. Lastly, the involvement of health shows how people are focused on participating and contributing to their health. Consumers nowadays focus on well-being and having a healthy diet. Therefore, they are guided by the healthiness of products, and they change their attitudes accordingly. Consequently, some consumers, having found out about the poor nutritional value of some foods, tend to change attitudes and give up certain types of food, even if they enjoy those (Szakály, Szente, Köver, Polereczki & Szigeti, 2012). It is mentioned that only consumers with health concerns buy hedonic food, which preconizes that taste and nutrition go hand in hand (Loebnitz & Grunert, 2018). The same goes for restaurants, where consumers with greater health awareness tend to look for healthier food (Sualakamala & Huffmann, 2010). Health awareness is a predictor of healthy attitudes and behavior (Gould, 1990), and this awareness is linked to health information highly influencing one’s attitude towards a certain product. Moreover, these consumers associate their healthy life to a healthy diet (Sualakamala & Huffmann, 2010; Bryant, 2019). Consumers are certain that their chosen diet influences their health, so with greater health awareness they tend to have healthier attitudes, like eating well, eating less meat or going vegan, working out, and worrying about the quality of what they eat (Szakály *et al.*, 2012). Individuals who are more aware about health are therefore self-conscious about their own health. According to Mai and Hoffmann (2012) when someone is health conscious, the nutrition of their food becomes a key factor in their attitudes and purchases.

Accordingly, the following hypothesis is presented:

Hypothesis 1: Health awareness has a positive impact on attitudes towards consumption of vegan products.

5.3.2. The Role of Environmental Concerns

Environmental concerns refer to “the degree to which people are aware of environmental problems and support efforts to solve them and/or indicate a willingness to contribute personally to their solution” (Dunlap & Jones, 2002). Environmental concern is the awareness individuals reveal when talking about environmental matters (Franzen & Vogl, 2013; Cruz, 2017), and how they are involved emotionally and willing to contribute to the resolution of environmental problems (Dunlap & Jones, 2002; Lawo, Esau, Engelbutzeder & Stevens, 2020). Nevertheless, research (Ingelhart, 1995) involving individuals from over 40 countries demonstrated that 96% of them were environmentally conscious, but only 65% of them would effectively do something for the environment. Environmental concern can also be defined based on the attitudinal, affective, cognitive, and conative dimensions. The affective dimension is related to high environmental awareness, the cognitive dimension refers to having a perfect understanding of the issue, and the conative dimension encompasses being willing to act and protect (Franzen & Vogl, 2013). There are three ways to understand environmental issues: individuals who are profoundly moved by environmental problems at an emotional level; individuals who are rational when addressing environmental problems; and individuals who are eager to act (Maloney, Ward & Braucht, 1975). Other studies highlight three types of environmental concerns: egoistic, social-altruistic, and biospheric. The egoistic base of environmental concern is seen when one’s own interests are above the interests of others who are not close to oneself, the social-altruistic value is apparent when there is concern for others, and the biospheric values entail concerns for animals and plants (Dietz, Fitzgerald & Schwom, 2005). Environmental concerns have an impact on behavior, purchases, and attitudes (Pagiaslis & Krontalis, 2014). The degree of environmental concern is frequently linked to socio-demographic characteristics, but can also be related to political orientations, ecological values, and belief systems. Some studies refer to the difference between women and men regarding environmental concerns – women are more concerned about environmental issues than men because they have different social roles (Marquart-Pyatt, 2012). Individual

income also seems to play a role – individuals with higher income demonstrate greater environmental concern (Ingelhart, 1995). Environmental concern is also linked to civic consciousness, shown through attitude, recognition, and response to environmental issues (Russel & Joan, 1978). Environmental concerns turn out to be extremely relevant in the consumer's attitude, influencing both attitudes and purchasing conducts (Konuk *et al.*, 2015). Individuals with greater environmental concerns are more willing to change their attitudes and lead eco-friendly lives (Wang *et al.*, 2017).

Environmental conservation behavior is deep-rooted in individuals who demonstrate environmental concerns. Such concerns are the most influencing factor leading individuals to change attitudes and become vegan. Therefore, the following hypothesis is proposed:

Hypothesis 2: Environmental concerns have a positive impact on attitudes towards consumption of vegan products.

5.3.3. The Role of Animal Welfare

Animal welfare refers to quality of life that comprises the well-being, life span, feelings, and happiness of animals and their living conditions (Wolf & Tonsor, 2017). The Vegan Society was founded in 1944 in order to stop animal suffering and killing (The Vegan Society, n.d.). "Animal welfare" refers to the physical and mental states of an animal in relation to the conditions in which it lives and dies. The "five freedoms" established in 1965 comprise freedom from hunger; freedom from fear and distress; freedom from heat stress or physical discomfort; freedom from pain, injury, and disease; and freedom to express normal patterns of behavior. These five freedoms define society's hopes for animals when under human control (World Organisation for Animal Health, n.d.) The term "animal welfare" is current in the daily lives of companies, consumers, and politicians, among others, and generally people believe animals have feelings, such as fear or sadness, and rights. To sum up, animal welfare embodies the respect for the health and behavior of animals (Greenebaum, 2012).

Animal welfare is defined differently by consumers and producers. Consumers are apprehensive about animal welfare, and it has more impact on purchase intention than on environmental concerns. Producers, on the other hand, are increasingly concerned about animal health, such as reducing the pain endured by animals and improving their comfort (Ventura, von Keyserlingk & Weary, 2015). Concerns about animal welfare, the disapproval of killing them, and animal rights can be the main cause for changing attitudes and becoming a vegetarian or vegan (Petti, Palmieri, Vadalà & Laurino, 2017). American and European countries tend to change their diet and lifestyle for the sake of animal welfare, whereas the Indian culture fosters vegan eating habits as a result of religious and cultural traditions (Del Hawkins *et al.*, 2004). Animal welfare is the starting point of the vegan lifestyle, inspiring concerns and attitudes towards vegan products.

Keeping in mind the importance of animal welfare and the vegan lifestyle, the following hypothesis is proposed:

Hypothesis 3: Animal welfare has a positive impact on attitudes towards consumption of vegan products.

5.3.4. The Role of Social Influence

Social influence happens when the way of life, actions, thoughts, and interests influence the conduct of others, and their actions change in the company of others (Markowski & Roxburgh, 2019). Family and friends influence directly and sincerely through evaluations and attitudes, providing the bases for changes in decisions and attitudes. Individuals can be influenced by the social environment in a number of ways (Wescomb, 2019). Social influence has direct and indirect impacts on feelings, views, and attitudes, eventually disturbing behavior. Traditional social influence is related to credibility as well. However, nowadays influences can come from unknown individuals through social media. No direct contact is necessary for someone to be influenced. This influence disturbs principles, attitudes, and standards (Tan & Ooi, 2018), and affects purchases (Ishibashia & Yada, 2019). The importance of understanding social influence derives from the fact that it assists in

understanding social behavior, consequently supporting decision-making, guiding public opinion, and driving change (Peng, Yang, Cao, Yu & Xie, 2017).

As a matter of fact, consumers choose to analyze a product when they are thinking about purchasing it or testing it. They get information through numerous channels, social influence being fairly important when analyzing consumers' attitudes and purchase intentions (Varshneya *et al.*, 2017). Social influence is a wide-ranging topic and has a strong and steady influence on consumers' actions and attitudes.

The social influence strategies that are studied include social learning, social proof, and social comparison (Stibe & Larson, 2016). Social learning occurs when behavior is changed through direct observation and imitation of others (Stibe & Oinas-Kukkonen, 2015). Social proof takes place when someone does not know how to behave and what to say and thus behaves in the same way as the group, assuming the group knows the correct social norms (Rao, Greve & Davis, 2001). Social comparison occurs when an individual compares himself/herself with similar others.

There are two types of social influence: informational social influence, and normative social influence (Hogg, Abrams, Otten & Hinkle, 2004). Informational social influence involves credibility (i.e., the information given by others is accepted as valid). Normative social influence involves satisfying the group's expectations. In some studies, the expression "normative social influence" is replaced by informative social influence (Kuan, Zhong & Chau, 2014). Concluding that health behavior is disseminated through social networks, social influence in severe health conditions can help to modify food choices, influence consumption to eliminate negative habits, and direct individuals in positive directions (Polivy & Pliner, 2015).

Regarding veganism, others tend to see an individual who does not eat meat as having a greater sense of virtue and therefore having social influence, inspiring others to become vegan (Wescomb, 2019; Raggiotto *et al.*, 2018; de Gavelle *et al.*, 2019). People with a strong sense of self-sacrifice are more likely to choose a vegetarian/vegan diet. Thereupon, social influence is identified as a modifier of consumers' choices and behavior, therefore

influencing attitudes towards veganism (Seyfang, 2006). The present research assumes that the social environment influences attitudes towards a vegan diet. Therefore, the following hypothesis was formed:

Hypothesis 4: Social influence has a positive impact on attitudes towards consumption of vegan products.

5.4. Understanding the Effects of Attitudes towards Veganism

5.4.1. Involvement with Vegan Products

Involvement happens when there is interest, connection, commitment, or focus on a specific issue, product, or situation that leads to an action (Richins & Bloch, 1986). It refers to an understanding, and to a relationship between a person and an aim or subject. Involvement is influenced by principles and benefits (Ghali, 2019). There is higher acceptance of products and services. This happens when there is personal involvement present, and for this reason, involvement can determine the purchase/selection of products. Involvement occurs when an individual searches for information about a product and creates a connection with what is intended to be purchased. It is the perceived relevance of an object/service in relation to values, interests, and needs. It is the main factor in the commitment process of the consumer. Involvement influences decision-making when purchasing. The individual is inclined to purchase a certain product once there is involvement — involvement influenced by personality traits, knowledge, and experience (Baldini & Ponchio, 2018). There are several levels of involvement ranging from high to low related to acquisition purpose (Park & Keil, 2019). High involvement requires more research, effort, consideration, comparison, and evaluation (Kim, Lee, Jeong & Moon, 2019; Rokonuzzamam, Harun, Al-Emran & Prybutok, 2020). Low involvement does not require research, and brand has a major role (Jeseviciute-Ufartiene, 2019). When the issue is health, values, and needs (Doods *et al.*, 1991) or the purchase of quality products (Rokonuzzamam *et al.*, 2020), involvement is always higher. The resulting involvement is

the combination of situational and enduring involvements, where the scope of the cognitive and behavioral complexities influences the purchase process. To summarize, involvement can be understood as the importance given to a product by the consumer's standards and attitudes, likes, and wishes, since people do tend to not purchase an object or service that can have a negative impact on their lives (Fishbein & Ajzen, 1975). Involvement is associated with consumer concerns, interests, beliefs, and lifestyle (Baldini & Ponchio, 2018), and therefore attitudes. As a result, it can be expected that attitudes towards consumption of vegan products may have an impact on involvement with vegan products. Consequently, the following hypothesis is proposed:

Hypothesis 5: There is a relationship between attitudes towards consumption of vegan products and involvement with vegan products.

5.4.2. Purchase Intention

Purchase intention can be understood as the willingness to purchase a product or service. Purchase intention is observed when there is an effort to purchase a product or service, and occurs when the provider displays features that meet consumers' needs (Doods *et al.*, 1991). Purchase intention is also seen when there is a probability or plan to make a purchase (Fishbein & Ajzen, 1975; Luo *et al.*, 2011; Wu, Yeh & Hsiao, 2011); the stronger the will is, the more likely it is that these products or services will be bought. The predisposition of consumers to satisfy their needs and be active regarding purchases shows that purchase intention is triggered by emotions, which may link them to brands, products, or services (Luo *et al.*, 2011). Purchase intention can be influenced by motivation, needs, or new information. Media has influenced the purchase intention process, making it more complex and influenced by several factors (Luo *et al.*, 2011). Knowledge about a product is an important factor for purchase intention, as well as information about the products availability (Chen & Deng, 2016). Besides product knowledge and information, product image plays an important role as well (Imelia & Ruswanti, 2017), but familiarity with the

product also creates purchase intention, and the more product familiarity there is, the likelier the purchase intention (Liu & Guo, 2016).

Perceived value is a significant factor in consumers' purchase intention that reinforces the willingness to buy, and shows a connection between the product and the consumer (Doods *et al.*, 1991). Other key aspects influence the purchase intentions of consumers, like price (Wu & Hsu, 2009), trust (Konuk *et al.*, 2015), and satisfaction (Ilie, Moraru & Ghita-Mitrescu, 2017). Attitude towards a brand, product, or service has a strong impact on purchase intention and inclination to purchase (Li, Curtis, Mccluskey & Wahl, 2002; Hsu *et al.*, 2017).

Engagement with a specific brand, product, or service will influence the choice of buying or not buying something (Holmes & Lett, 1977). Consequently, when the involvement is positive there is greater intention to purchase (Wang & Wu, 2011). Thus, given the importance of understanding engagement with vegan products and consumer purchase intentions, the following hypothesis can be considered:

Hypothesis 6: Involvement with vegan products has an impact on purchase intention.

5.4.3. Word of Mouth (WOM)

WOM is defined as “oral, person-to-person communication between a receiver and a communicator whom the receiver notices as being non-commercial, concerning a brand, a product or a service” (Arndt, 1967, p. 3); as information that intends to influence by describing products and services (Westbrook, 1987); and as collection of information (Wee, Lim & Lwin, 1995). WOM is one of the first methods of spreading information about goods, “a face-to-face conversation between consumers about a product or service experience” (Sen & Lerman, 2007). WOM is also understood as a way for non-commercial individuals to communicate among themselves without aiming at promoting or benefitting businesses (Mishra, Bakshi & Singh, 2016). To sum up, a communication between consumers about a product or service can be defined as word of mouth – a casual conversation between

individuals regarding their assessment of products and services (Zhang, Li, Cao & Huang, 2018). WOM is unquestionably influenced by consumers' choices and involvement (Houston & Rothschild, 1978). According to the same authors, where there is involvement, there is WOM, which in turn is a way of involvement per se, originating communication, and giving information about an idea, product, or service (Maklan & Klaus, 2011). Therefore, the following hypothesis can be formulated for the WOM variable:

Hypothesis 7: Involvement with vegan products has an impact on WOM.

5.5. The Moderating Role of Idealism

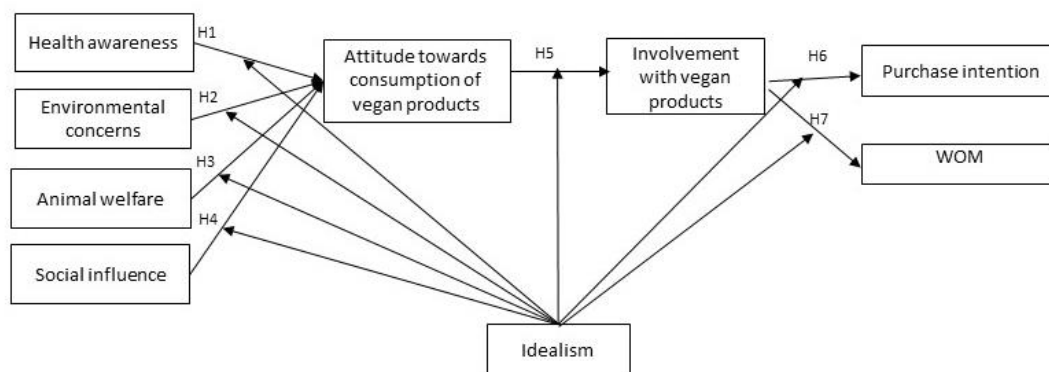
The philosophical definition for idealism states that existence is subjective, so reality is accordingly known through ideas: "Idealism is the opinion that we immediately experience only our own existence but can only infer that of outer things (which inference from effect to cause is in fact uncertain)" (Kant, 2010, p. 294). An idealist is someone who believes in ideas and noble feelings. In order to improve society, idealists oppose materialism and believe that what is considered good will succeed (Pablé, 2018). Idealism can be understood as an intellectual image of values and standards, seeking to display a person as he or she sees himself or herself. Idealists have principles and morals as important components of their belief systems (Sarnowski, 2018). If people avoid harming others, they are considered idealists, and the more they avoid doing so, the more idealists they are; these individuals will not act if they know that their action could possibly harm somebody (Wang & Calvano, 2015). The idealism of consumers influences their purchase behavior, as these "idealist" consumers have high moral standards and values; moreover, these moral standards influence business environments (Forsyth, 1980). In businesses, idealism influences the choices of organizations regarding what products/services to sell, and the organizational work environment itself. The reduction or elimination of meat consumption is due to idealistic features influencing the predisposition to purchase eco-friendly and vegan products; the higher these moral standards are, the more unwilling they are to hurt animals.

5.6. Method

The conceptual research model depicts the suggested relationships between the researched constructs. In Figure 2, the model attempts to clarify the set of developed hypotheses.

Figure 2

Conceptual model.



5.6.1. Sample and Data Collection

This study is based on two samples, 224 Portuguese vegans and 356 Brazilian vegans. The sampling was performed by sharing the questionnaire in four Portuguese Facebook vegan groups with up to a total of 82,500 members (including “Vegetarianos de Portugal”, which has 10,000 to 25,000 members) and four groups in Brazil with up to a total of 202,400 members (including “Ogros Veganos”, which has 8,000 to 170,000 members). We asked a member from each group for permission and help to share our questionnaire and collect the answers. Data collection lasted 2 months, from January to February 2019, and three recalls were made to obtain an acceptable sample. For each parameter, 200 or 5 or 10 cases were agreed as the minimum sample size to perform structural equation modelling (Hair *et al.*, 2010). Most of the respondents were female, aged between 18 and 33 years, holding a university degree, employed, and earning a monthly income between €501 and €1,499 (see Table 15).

Table 15*Demographic profile of the respondents*

Category	Portugal	Brazil
Male	31	39
Female	193	317
Age		
10–17	6	12
18–25	92	126
26–33	61	129
34–41	31	59
Over 41	34	30
Education		
Secondary school	87	114
Higher education	137	242
Occupation		
Student/student workers	74	154
Employed	128	154
Others	22	46
Household		
1–2 people	115	164
More than 3 people	109	192
Income		
Less than €500	16	61
€501– €1,499	127	151
Over €2,000	81	144

5.6.2. Measurement

The questionnaire is based on tested scales, which were translated and adapted from past relevant literature. The questionnaire contains 7 demographic questions, and 41 closed questions to measure the proposed concepts. All items were measured on a seven-point Likert scale (1 = strongly disagree to 7 = strongly agree). The metrics can be found in Table 16, which identifies the origin of the metrics and the standardized regression weights.

Table 16*Results of confirmatory factor analysis*

Construct	Metrics	SRW	CR
Attitudes towards consumption of vegan products (ATV) (Han <i>et al.</i> , 2017)	1. I am interested in knowing more about vegan products.	0.901	----
	2. I would like to consider vegan products as one of my shopping choices.	0.924	34.481
	3. I have a positive feeling when buying vegan products.	0.766	23.730
Involvement with vegan products (INV) (Teng & Lu, 2016)	1. Vegan products are important to me.	0.929	----
	2. Vegan products are really interesting to me.	0.904	35.015
	3. I am concerned about animal issues.	0.760	24.163
	4. I am very much engaged with vegan products.	0.630	17.767
Health awareness (HA) (Teng & Lu, 2016)	1. I think about my health.	0.773	----
	2. I am aware of my health.	0.877	22.543
	3. I am aware of changes in my health.	0.800	20.261
	4. I tend to be informed about my health.	0.826	21.064
	5. I have responsibility for the state of my health.	0.660	16.200
	6. I monitor my health status daily.	0.686	16.920
Environmental concerns (EC) (Yadav & Pathak, 2016)	1. The balance of nature is very delicate and can be easily changed.	----	----
	2. Human beings, when they interfere with nature, often cause disastrous consequences.	0.668	----
	3. Human beings must live in harmony with nature to survive.	0.770	15.378
	4. Humanity is abusing the environment.	0.827	16.047
	5. Humanity was not created to dominate the rest of nature.	0.747	15.039
Animal welfare (AW) (Graaf <i>et al.</i> , 2016)	1. Animals must be kept in their natural habitat.		
	2. It is important for animals to behave naturally.	0.734	----
	3. I care about the welfare of animals.	0.873	18.215
	4. Animals must not suffer.	0.753	16.828

	5. The idea of a “natural environment” applies to both domestic and wild animals.	----	----
	6. Companies must think about their profits, but also about animals.	0.578	12.967
	7. Companies must think about animals as well as their market value and costs.	----	----
Social influence (SI)	1. My friends often recommend me vegan products.	0.844	----
(Varshneya <i>et al.</i> , 2017)	2. My friends usually go shopping for vegan products with me.	0.725	18.310
	3. My friends often share their experiences and knowledge about vegan products with me.	0.866	20.668
Purchase intention (PI)	1. I am happy to buy vegan products.	0.803	----
(Teng & Lu, 2016)	2. I hope to consume vegan products.	0.856	23.679
	3. I would buy vegan products.	0.820	22.328
	4. I plan to consume vegan products.	0.772	20.577
	5. I intend to buy vegan products in the next few days.	0.650	16.566
Word of mouth (WOM)	1. I recommend vegan products to many people.		
(Hair <i>et al.</i> , 2010)	2. I tell my friends about vegan products.	0.809	----
	3. I try to spread the benefits of vegan products.	0.947	26.184
	4. I do a lot of positive advertising for vegan products.	0.854	24.069

Note: CR - critical ratio; SRW - standardized regression weights.

Idealism, the moderator, was measured using the scale from Leonidou *et al.* (2013). Items like “I adhere to universal principles and moral absolutes when making moral judgements” were used (Leonidou *et al.*, 2013).

It is important to highlight that to minimize common method variance (CMV) the questionnaire was designed considering some fundamental aspects (e.g., the respondents were not informed about the main topic of the current research, they were assured that their answers would be anonymous and confidential, we informed the respondents that there were no right or wrong answers, and we stressed that their participation was very important for this research, etc. (Podsakoff, MacKenzie, Lee & Podsakoff, 2003). Harman’s single factor test and a common latent factor analysis were performed to identify the common variance (Podsakoff *et al.*, 2003). Harman’s test, carried out in SPSS 25.0, showed that any factor could explain more than 20.77% of the variance, and there were seven

factors with eigenvalues greater than one explaining 71.338% of the total variance (Norman, 1988). In addition, a confirmatory factor analysis was performed, limiting all items of the model to load on a common single factor (Podsakoff *et al.*, 2003). The resulting fit indices show that the model did not provide an acceptable fit (chi-square/degrees of freedom (X^2/df) = 14.864; incremental fit index (IFI) = 0.453; Tucker–Lewis index (TLI) = 0.414; comparative fit index (CFI) = 0.452; root mean square error of approximation (RMSEA) = 0.155), so the common method bias does not seem to be a problem.

A confirmatory factor analysis was used to measure the psychometric properties of the scales and the measurement model fit (Bagozzi, Todd & Heatherton, 1994) using Amos 25. The end model shows a good fit (IFI = 0.925; TLI = 0.917; CFI = 0.924; RMSEA = 0.058; X^2/df = 2.966) (Forsyth, 1980). Table 3 presents the bivariate correlations and Cronbach’s alpha, composite reliabilities, and average variances extracted that support validity and reliability analyses. Composite reliability (CR) and the average variance extracted (AVE) were computed. All scales showed values above 0.7 on CR and above 0.5 on AVE, which are in line with the recommendations (Hair *et al.*, 2010). Discriminant validity is supported by the fact that all bivariate correlations between the constructs are significantly smaller than 1, and the squared correlations calculated for each pair of constructs are always smaller than the variance extracted for the corresponding constructs (Han *et al.*, 2017), thereby confirming the discriminant validity.

Table 17

Bivariate correlations, Cronbach’s alpha, composite reliabilities, and average variances extracted

Constructs	SD	HA	EC	AW	SI	ATV	INV	PI	WOM	AVE	CR
HA	0.841	0.888								0.599	0.899
EC	0.377	0.177	0.821							0.571	0.841
AW	0.348	0.028	0.218	0.805						0.550	0.828
SI	1.709	0.080	0.181	0.049	0.852					0.663	0.854
ATV	0.638	0.087	0.199	0.237	0.098	0.885				0.751	0.900
INV	0.723	0.146	0.251	0.212	0.097	0.591	0.872			0.684	0.885
PI	0.613	0.108	0.240	0.229	0.094	0.502	0.504	0.873		0.644	0.887
WOM	0.900	0.105	0.183	0.138	0.269	0.435	0.409	0.377	0.899	0.760	0.904

Note: SD - standard deviation; diagonal in bold - Cronbach's alpha; CR - composite reliability; AVE - average variance extracted; HA - Health awareness; EC - Environmental concerns; AW - Animal welfare; SI - Social influence; ATV - Attitudes towards consumption of vegan products; INV - Involvement with vegan products; PI - Purchase intention; WOM - Word of mouth.

5.7. Results

Amos 25 was used to perform structural equation modelling (SEM) and the hypotheses tests. Covariance-based structural equation modelling is a suitable technique to perform confirmatory factor analysis and SEM when we have a good sample size (more than 200) and multivariate data normality (Hair, Ringle & Sarstedt, 2011). The final model shows a good fit (IFI = 0.925; TLI = 0.917; CFI = 0.924; RMSEA = 0.058; $\chi^2/df = 2.966$). A multigroup analysis was performed to test the moderation effects of idealism. We divided the sample in two groups based on average: the high-idealism group (above average), with 357 respondents, and the low-idealism group (below average), with 223 respondents. Furthermore, group nationality analysis was performed: 224 Portuguese and 356 Brazilian respondents. Metric invariance was tested, and a CFI difference below 0.01 was found in both models, supporting the expected metric invariance (Cheung & Rensvold, 2002).

Table 18

Results

	General		High Idealism		Low Idealism		Portugal		Brazil	
	(n = 580)		(n = 357)		(n = 223)		(n = 224)		(n = 356)	
	SRW	p	SRW	p	SRW	p	SRW	p	SRW	p
H1										
Health awareness → ATV	0.064	NS	0.099	*	-0.009	NS	0.023	NS	0.055	NS
H2										
Environmental concerns → ATV	0.149	**	0.095	NS	0.169	*	0.228	**	0.124	*
H3	0.205	**	0.173	**	0.226	**	0.348	**	0.117	*

Animal welfare → ATV										
H4	0.061	NS	0.072	NS	0.041	NS	0.057	NS	0.059	NS
Social influence → ATV										
H5	0.858	**	0.852	**	0.873	**	0.926	**	0.812	**
ATV → INV										
H6	0.865	**	0.939	**	0.794	**	0.959	**	0.802	**
INV → Purchase										
H7	0.432	**	0.471	**	0.35	**	0.452	**	0.425	**
IVP → WOM										

Notes: (1) p- significance; (2) two-tailed test: ** $p < 0.01$; * $p < 0.05$; n.s.—not significant ($p > 0.05$); (3) ATV—attitude towards veganism; IVP—involvement with vegan products; NS—not significant.

Table 18 presents the overall results for hypotheses testing, the idealism moderation effects, and the comparison between countries. H1 ($R = 0.064$; $p > 0.05$) and H4 ($R = 0.061$; $p > 0.05$) are not supported, showing that health awareness and social influence do not affect attitude towards veganism (ATV). H2 ($R = 0.149$; $p < 0.01$) and H3 ($R = 0.205$; $p < 0.01$) are supported, showing that environmental concerns and animal welfare are the drivers of ATV. H5 ($R = 0.858$; $p < 0.01$), H6 ($R = 0.865$; $p < 0.01$), and H7 ($R = 0.432$; $p < 0.01$) support the hypotheses that ATV may influence involvement with vegan products, purchase intention, and WOM.

5.8. Discussion

Environmental concerns are expected to influence or predict individual attitudes towards a vegan diet establishing a relationship with ATV (Wang *et al.*, 2017). At the same time, attitudes towards animal welfare are expected to have an impact on one's attitudes towards non-animal food and rejection of animal-based products (Petti *et al.*, 2017). Our results support these assumptions, showing how individual ideology may influence the individual's attitudes towards veganism. On the contrary, individual issues like one's health and social influence do not seem to have an impact on the attitudes of vegans. In fact, veganism seems not to be a matter of individual convenience or social norms. Veganism is a matter of beliefs and attitudes towards nature, animals, and the environment. What

drives human attitude towards veganism are not individual factors, but essentially questions of ideological nature (Tunçay Son & Bulut, 2019) that address the engagement of people with nature and respect for animal life. The need to reduce meat consumption is ethically justified (Tobler, Visschers & Siegrist, 2011). Individuals choose to become vegan based on principles like animal welfare and the environment, readjust their lifestyle because they are concerned about the well-being of others (Wang & Calvano, 2015), and are predisposed to changing their attitudes and behavior. Vegans are concerned about ethical factors, connecting their belief system with attitudes, linking ideals and the consumption of vegan products (Ruby, 2012).

H5, H6, and H7 are supported, showing that ATV can influence involvement with vegan products, purchase intention, and WOM. According to the literature (Kim *et al.*, 2019), attitude represents both the individual assessment of a product and the position towards a product, thus influencing involvement. Based on our results, individuals who apparently develop a positive attitude towards consumption of vegan products are more involved with vegan products. At the same time, highly ecologically committed individuals seek to buy according to their connection with a product, and purchase intentions increase when individuals perceive that the value of a product fits their vegan lifestyle (Doods *et al.*, 1991; Hsu, Chang & Yansritakul, 2017). Because vegans are deeply involved in this way of life, buying requires intense research and planning in order to purchase adequate vegan products (Wu *et al.*, 2011). Furthermore, based on our results, individuals who are engaged in vegan diet and eco-friendly lifestyle are more likely to buy vegan products. WOM is a form of involvement influenced by individual choices and attitudes towards products (Maklan & Klaus, 2011; Anderson, 1998). Our results also suggest that individuals who become involved with vegan products are more likely to spread their opinions to others.

Aspects related to moderation show that, in fact, idealism seems to affect the impact of environment and animal welfare on attitudes, and it appears that it is among individuals with lower idealism that these impacts are greater (i.e., the pressure to increase respect for nature and the environment is translated into a growing trend towards veganism). This is particularly evident in people with lower idealism; apparently people with higher idealism no longer need this awareness and this effort. In contrast, we realize in H5, H6,

and H7 that, in fact, it is idealism that turns attitudes and involvement into behavior, meaning that individuals with higher idealism are those who go beyond attitudes and are more prone to convert it into purchasing decisions and commitment to others by disseminating a positive WOM.

As for nationality differences, we found that the impacts of the environment (H2) and animal welfare (H3) were greater among the Portuguese respondents. In H6 and H7, the Portuguese respondents demonstrated once more that attitudes turn easily into behavior. With regard to the effects of the differences between Portugal and Brazil, we found that in all cases it was in Portugal that the effects were greatest. These results may be explained by some differences between the countries. According to Hofstede Insights (n.d.), both countries are classified as collectivist countries. Therefore, both groups easily exchanged views and communicated what they believe to be correct. The slight difference between the countries may however explain attitudes turning into behavior due to loyalty to the group, which influences lifestyles and choices. According to studies from Hofstede (Hofstede Insights, n.d.) indulgence is higher in Brazil. Portuguese are pessimistic by nature, and they feel controlled by social norms, believing that something that is joyful in their life is wrong to some extent. On the other hand, based on the same studies, Brazilians are more permissive, easy-going, and impetuous, and they appreciate life. These cultural features probably explain the variance in the results. Portuguese are less competitive and more compromised; they respect fairness, solidarity and value, and are concerned about quality of life and the community, while Brazilians are more competitive and focused on winning (Hofstede Insights, n.d.). Such differences may also explain the results.

5.9. Contributions and Limitations

5.9.1. Theoretical Contributions

Not consuming any animal products or animal-tested products characterizes vegan lifestyle. The number of people who opt for this lifestyle is rapidly increasing all over the

world. The literature shows however that little research has been produced on how it impacts on attitudes towards the consumption of vegan products. The present study contributes to the awareness and dissemination of vegan products. Our research provides three major contributions: (1) the first contribution is based on the comparison between variables of a more individual nature, such as health awareness and social influence, and variables of a more ideological nature, namely environmental awareness and animal welfare; (2) the research provides a more comprehensive outlook on attitudes and involvement, investigating antecedents and consequents, and establishing a chain of effects between determinants and outcomes of vegan attitudes; (3) this study introduces the moderating role of idealism, creating a specific individual context that may influence the impact of attitudes/involvement on purchase intentions and WOM. Previous studies supported the idea that health awareness and social influence (Wescomb, 2019) lead individuals to veganism, but our results show otherwise. Additionally, this research introduces the effects of national culture by comparing Brazilian and Portuguese vegans.

5.9.2. Practical and Policy Implications

In addition to making academic contributions, this study demonstrates that the vegan philosophy lifestyle is especially related to animal welfare and environmental concerns. On the other hand, more individual issues, like health issues, do not have an impact on vegan consumers. The findings show that emotional concerns and ideological issues motivate individuals to become vegan, and concern for animal well-being and the environment are the drivers towards adopting veganism. Veganism is about animal protection, the choice to live as much as possible with the absence of animal products, and the abolishment of meat ingestion and use of animal products of any kind in the day-to-day life. The study may help vegan movements, animal protection movements, public policies to be more efficient and influential in society, and win more supporters to the cause. Perceived health and food awareness plans should have a special place in schools and be part of citizenship programs in order to display the key determinants of issues involving animals and nature protection (Arrieta & González, 2018). Recognition and support for vegan diets and lifestyles will lead

to a bigger understanding of the importance of protecting animal life, the climate, and nature (Jalil, Tasoff & Bustamante, 2020).

At the same time, the study helps marketing directors to understand how to reach vegan consumers, and how to transform their businesses, reacting and creating value propositions that answer to these clients' needs. By understanding motivations and emotions, marketing strategies may be crafted in order to answer these more ideological consumers. The study displays the path that consumers are taking, for both vegans and non-vegans, opening access to new business opportunities, and improving existing ones by understanding all those who want to spread respect for animals and nature, and for an ethical behavior in consumption. Therefore, in terms of practical implications, the moderating effects stated in this study suggest that marketing directors should follow not consumers' individual factors but those with ideological nature, appealing to a more ethical product and marketing strategy.

5.9.3. Limitations and Future Research Directions

This is a cross-sectional study that does not allow inference of causality, as it shows relationships but does not demonstrate causality amongst the variables; its ability to detect strict causality between variables is restricted. The proposed model should be replicated in other countries in order to understand behavior and attitudes towards vegan products, since cultural aspects seem to be relevant. The vegan movement will gain from studies that try to understand intentions to adopt this lifestyle. Consequently, this research seeks to address the individual from both vegan and consumer perspectives, taking into account beliefs and intentions. The marketing area stands to gain from this understanding and should be able to analyze and design products and services for these consumers, fostering the development of new products and identifying those that already exist.

As for recommendations for future research, the model could be tested analyzing the effects of gender, and introducing variables like ethical consumption, personality traits, sensitivity, and religion, which could be relevant drivers of vegan attitudes.

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Chapter VI - Vegan Tribalism: What Pushes a Vegan?

Abstract

The purpose of this study is to understand what influences the willingness to be in a vegan tribe. Eco-motivated antecedents (ecological motivations, environmental concerns, and animal welfare), personal antecedents (social influence, idealism) and the influence vegan tribalism may have on involvement with vegan products and WOM. The moderating role of attitude towards the consumptions of vegan products is presented.

A structured questionnaire collected information from two cross-sectional samples of 224 Portuguese and 356 Brazilian vegans among Facebook groups of vegans. Structural Equation Modelling (SEM) is used to test the proposed hypotheses.

Results show that ideological issues, ecological motivations, environmental concerns and animal welfare influence individuals to be part of a vegan tribe. The need to be in a tribe is combined with the difficulty of being accepted as vegan, even if social motivations seem to be absent. Tribalism, therefore, as a strong influence on involvement with vegan products and WOM, but moderated by vegan attitudes.

This investigation compares the impact of personal and eco-motivated determinants on the willingness to be in a vegan tribe, using attitude towards the consumptions of vegan products as a specific context to investigate these relationships, comparing Brazilians and Portuguese and the effects of national cultures.

Keywords: veganism, tribalism, vegan products, attitudes, vegan tribe

6.1. Introduction

Growing concerns towards the environment and animals has emerged recently. Living today without consuming animal products is more than a trend – it is a way of life. According to The Vegan Society (2020), many people experience difficulties in choosing this lifestyle. Vegans embrace a severe food regime by avoiding any kind of animal products like food, clothing and beauty products (Ruby, 2012). Being vegan is not only a diet but also a standard of living and a philosophy of life. Results of a study piloted by The Vegan Society and the ecologist platform The Ecologist in 2019 showed that the popularity of veganism is increasing, although becoming vegan remains a challenging decision. Veganism stands for the fight against animal exploitation – it is a pro-animal movement (Martinelli & Berkmanien, 2018). An individual chooses the vegan lifestyle because of the harmful outcomes to the environment and animals. Individual preferences, taste and stereotypes are however some of the hindrances that can keep people from going totally vegan (Greenebaum, 2012; The Vegan Society, 2020). According to Martinelli and Berkmanien (2018), social and moral concerns are key factors when deciding to become vegan. Being vegan is, most of the times, being part of a social group, where there is comprehension and support when someone chooses not to eat meat or consume animal products. However, when the choice to be vegan is rather moral, the individual risks being alone and misunderstood (Jabs *et al.*, 1998; Ruby, 2012). The need to belong to a social group is, therefore, embedded in every individual and on her/his behavior. Humans are tribal creatures and need to be around individuals that understand and accept their lifestyle (Clark *et al.*, 2019). Vegan tribalism is a way of socializing a common set of values, feelings, traditions, and rituals associated with both a particular diet as well as a way of living (Cova & Cova, 2001; Moutinho *et al.*, 2007). Relationships between consumers have been classified as tribal behavior and described as these individuals being part of a brand community or a brand tribe (Tsiotsou & Veloutsou, 2011). Mirroring this concept, the relationships between vegans makes them part of a vegan tribe. Alongside with religious reasons, individuals choose to be vegan for ethical and health concerns (Kalte, 2020).

Few studies mention the social impact of being vegan, and of being prejudiced by it (Earle & Hodson, 2017). Concern about meat production and consumption impact on the

ecosystem (DaSilva, Hecquet & King, 2019), as well as the ecological motivations impact on the decision to follow a vegan lifestyle; have scarcely been studied (Wang *et al.*, 2017). In the new veganism field, the involvement with vegan products and vegan lifestyle is not yet well studied (Norel *et al.*, 2014). Therefore, the need to understand what impacts the willingness to belong to a vegan tribe remains. Environmental concern and eco-friendly products have an effect on vegans' attitudes and purchasing behavior, and also impact social relationships (Rex & Baumann, 2007). So, even if there is valuable information regarding drivers of vegan identity, investigation about veganism as a movement and how it impacts lifestyle is limited (Cherry, 2015; Greenebaum, 2012; Ciocchetti, 2012; DaSilva *et al.*, 2019).

In order to fill these gaps, this study intends to investigate what influences the willingness to be part of a vegan tribe. The will to belong to a vegan tribe might be influenced by moral standards like ecological motivations, environmental concerns and animal welfare, as well as personal views, social influence, and idealism. Furthermore, this investigation intends to understand if vegan tribalism might affect the involvement with vegan products and WOM. The role of a more or less favorable attitude towards consumption of vegan products moderates the proposed relationships. This investigation is based on cross sectional data using two samples of 224 Portuguese and 356 Brazilian respondents. Although Portugal and Brazil are related countries, Hofstede Insights (n.d.) identifies several cultural differences – like individualism, uncertainty avoidance, masculinity, and indulgence – that can influence vegan tribalism and the willingness to be part of a vegan tribe.

6.2. Conceptual Development and Research Hypotheses

6.2.1. Vegan Tribes

Being vegan is not only the choice of a regime based on not using animal products of any kind; it also means living accordingly to strict ethical guidelines (Piia *et al.*, 2019). It is above all a way of life, a 'lifestyle movement' (Wilson, 2019) where the protection of animals is the keynote (Greenebaum, 2018), i.e., the defense of animal rights (Munro, 2005), and

ending of animal abuse (Cooper, 2018). A vegan is now not only limited to a diet, but also wishes to protect animals, because animals are not considered as property (Greenebaum, 2018) – animals are beings that have feelings and emotions (The Vegan Society, n. d.). Furthermore, being vegan is a way to protect the environment (Tunçay Son & Bulut, 2019), which benefits from less farming (Mills, 2019). Veganism has expressively increased in the last decades (The Vegan Society, n.d.). Veganism is a belief system that entails ingesting and using only non-animal products and its derivatives (Wilson, 2019), that is against animal testing (Çiçekoğlu, 2018), and that advocates not attending any leisure activity that uses animals (Cherry, 2015). In fact, even if a product is not animal-based but has harmed the animal world in some way, it is also rejected by vegans because it does not support their life philosophy (Tunçay Son & Bulut, 2019).

Besides the concerns of having a healthy diet, consumers are actually worried about what they eat and drink (Martinelli & Berkmanien, 2018). Alongside religious traditions, ethical reasons become one of the main reasons to decide for veganism (Key *et al.*, 2006). The moral issue is mostly associated to animal welfare, while health concerns regarding food safety influence individuals to become vegan (Key *et al.*, 2006). According to Martinelli and Berkmanien (2018), individuals who choose veganism can be classified into four categories. The first one is the “to do individually”, i.e., the vegan makes choices regarding health and/or cost. Second, there is the “to be individually” vegan – when an individual is concerned about taste and feels disgusted by animal products. Third, we have the “to do socially” vegan, a more ethical vegan, concerned with animal well-being and the environment, and seeking social justice. Finally, there is the “to be socially” vegan who follows movements and spiritual beliefs. Greenebaum (2012) defends the categorization of vegan individuals according to their moral standards and beliefs. The author classified vegans into three types: first, the ethical vegans, concerned about animal rights; then the environmental vegans, individuals who understand the impact of the meat and dairy industry on the environment; and lastly the health vegans, who understand veganism as a way to improve their health.

Veganism has been seen as being rather ethical (Martinelli & Berkmanien, 2018) – a movement that contributes to the improvement of health, and animal and environment

protection (The Vegan Society, n.d). Vegans act more ethically in their day-to-day life (Grauel, 2016), but veganism is also seen as a social movement (Cherry, 2006), and individuals want to be linked to a vegan community because of its higher moral standards (Martinelli & Berkmanien, 2018). Humans are tribal beings, looking for social integration, willing to support the interests of their tribe and themselves (Bagozzi & Dholakia, 2006; Clark *et al.*, 2019). Tribalism gives a sense of identity, a sense of belonging, a collaborative and participatory living, and fills the social and psychological needs (Cova & Cova, 2001). Therefore, vegans and their tribes are usually involved in social events that are related to their lifestyle, in order to share experiences, recipes, and attract more individuals to veganism (Twine, 2017). Social gatherings about veganism occur more regularly and attract a substantial number of individuals (Twine, 2017), and have increased when food started to be mentioned in social, political and cultural speeches (Martinelli & Berkmanien, 2018). The vegan movement is sustained by other vegans that provide a support system, where the collective social identity unifies and aids each member of the tribe (Cherry, 2006) even when non-vegans see veganism as something negative (Earle & Hodson, 2017). The vegan tribe is a group of people linked to one another by an ideal, a way of life.

Tribalism is a unification of individuals with identical features, that identify themselves with others for the most various reasons, like beliefs, lifestyle and tastes (Maffesoli, 2016). The word “tribe” refers to the feeling of fitting in, to people that share the same values and beliefs (Charrad, 2011). Individuals join others who share similar traits, and eventually see themselves as part of something bigger (Plante, Rosenfeld, Plante & Reysen, 2019). Rituals, culture, and traditions are ways to express the social identity that cross the tribe (Brosius & Polit, 2011). It is usual to voice social interaction with common goals and beliefs into tribes’ rites (Cova & Cova, 2001; Clark *et al.*, 2019). Therefore, individuals connect themselves regarding to their intentions, sympathy, or needs, and they might join one or more tribes because of the wish to be among others with common interests and beliefs (Maffesoli, 2016). Similar objectives become factors of union, giving the group a sense of well-being and pride based on an identity (Cova & Cova, 2001). Tribe is consequently a human social group composed by individuals that share the same belief system, and also the predisposition to be loyal to one’s own tribe (Clark *et al.*, 2019). Tribalism is linked to

culture, communal belonging, collective stability, and security, i.e. the feeling of insecurity leads to the need or desire to belong to a tribe (Clark *et al.*, 2019). Brand communities might be seen, somehow, as a tribe extension, related to a particular brand – when individuals look for information and know-how, and are willing to be part of a social group that understands feelings, passions, needs, and wishes regarding this brand (Baldus *et al.*, 2015; Shen *et al.*, 2016).

A tribe can be a heterogeneous network regarding age, income, or gender but homogeneous by sharing a belief system or emotion. Tribalism can be understood as collective and involved living (Veloutsou & Moutinho, 2009). Members like that are, as consumers, capable of acting collectively and defending a brand or a product (Cova & Cova, 2001). The tribal consumer has a strong emotional connection to a particular product category (Jurisic & Azevedo, 2011), and tribes influence personal consumption decisions (Clark *et al.*, 2019). Therefore, it seems easy to recognize that vegan tribes share their way of life within communities that understand, support, and do not ostracize them due to their consumption practices (Schau, Muniz & Arnold, 2009).

Tribal consumption is based on social linking, on social bonds influenced by the social network and susceptible to interpersonal influence (Cova & Cova, 2001). Tribal marketing has consequently gained importance and expression in the organizations – the ideas of social union, community (i.e., tribalism) need to be understood by their marketers (Clark *et al.*, 2019). Tribalism has an influence on consumers' choices: the loyalty to the vegan tribe increases involvement and attitude towards vegan products (Ruane & Wallace, 2015). Individuals consume products for their representative significance (Veloutsou & Moutinho, 2009). Vegans focus on their responsibility towards the world (Ciocchetti, 2012), and supportive social networks and a collective social identity (Cherry, 2006) are ways to motivate and continue with veganism, and to engage in different consumptions.

6.2.2. Understanding Vegan Tribes

6.2.2.1 The role of ecological motivations

Climate change and environmental issues impact life, and individuals are getting more aware about these issues. The subsequent change of their actions is leading to an eco-friendly lifestyle. Ecological motivations are related to environmental and animal concerns (Honkanen *et al.*, 2006), sustainable development, and environmental responsibilities (Faria *et al.*, 2016). Ecologically motivated individuals tend to choose products that do not harm the environment and that respect animal welfare (Honkanen *et al.*, 2006). Ecological motivations have been identified as being significant for maintaining a sustainable behavior (Faria *et al.*, 2016). Highly ecologically motivated individuals are more likely to buy eco-friendly products (Wang *et al.*, 2015), and to adopt a vegan diet (Radnitz *et al.*, 2015; Janssen *et al.*, 2016). Purchasing green and vegan is related to environmental concerns, environmental issues (Tobler *et al.*, 2011), and environmental responsibility (Dagher & Itani, 2014). Ecological motivations have a significant effect on the attitude towards vegan consumption, since these products are related to ecological products (Tobler *et al.*, 2011; Radnitz *et al.*, 2015). Ecological consumption, animal welfare, environmental issues, health concerns, and the shared culture and values that are the basis of the vegan philosophy (Greenebaum, 2012) tend to comfort vegans in their self-preservation (Clark *et al.*, 2019). Therefore, being in their tribe eases up the pressure from their life choices and eases up their everyday life (Grauel, 2016). Thus, it is extremely important to study this relationship between ecological motivations and tribalism in order to understand the individual's willingness to be part of a vegan tribe (Charrad, 2011). So, the following hypothesis is proposed:

H1: Ecological motivations influence the willingness to belong to a vegan tribe.

6.2.2.2. The Role of Environmental Concerns

Environmental concerns are defined as the understanding that environmental issues, as well as attitudes towards the environment are important (Cruz, 2017). Environmental concerns are also defined as the awareness about environmental problems and the willingness to solve them (Cruz, 2017). Environmental concerns can also be understood as

an emotional attitude concerning the severity of environmental issues (Greaves *et al.*, 2013). Dietz *et al.* (2005) categorized individuals into three types of value bases for environmental concern: the egoistic involves the individual and the ones around, like family and friends; the social or humanistic altruism, includes the community; and biospheric altruism, whose concerns include animals and the ecosystem, recognizing the importance of nature, and the need to preserve the well-being of all living species (Dietz *et al.*, 2005). The concern with the environment and society is intrinsic to consumers who engage in environmental conservational behavior (Greaves *et al.*, 2013). Those with environmental concerns show predisposition to buy eco-friendly products, and to contribute to the environmental protection (Greaves *et al.*, 2013). The more environmentally concerned an individual is, the more environmentally friendly products he/she purchases (Arisal & Atalar, 2016). Once individuals purchase eco-friendly, their awareness regarding the environment gets intensified (Arisal & Atalar, 2016). Environmental concerns influence consumers to adopt a diet based on vegan products (Cruz, 2017). Vegan tribes understand their obligation towards the planet (Ciocchetti, 2012) and spread the word regarding environmental issues (Ruane & Wallace, 2015). The vegan tribe's support system is based on a network where everyone has the same belief system, and aims towards the same results, i.e., protecting the environment by making adequate choices (Cherry, 2015). Environmental concerns stimulate this willingness to belong to a vegan tribe and, in turn, the loyalty to the vegan tribe might increase their attitude towards the protection of the environment (Ruane & Wallace, 2015), and their willingness to live green (Wang *et al.*, 2017). So, the following hypothesis is proposed:

H2: Environmental concerns influence the willingness to belong to a vegan tribe.

6.2.2.3. The Role of Animal Welfare

Animal welfare is becoming increasingly influential in daily choices mainly regarding food preferences. Extreme driven vegans avoid animal products overall, due to concerns about animal welfare. Animal welfare encompasses the animal's health, lifecycle and feelings

(Dietz, Allen & McCright, 2017; Lund *et al.*, 2019): “Animal welfare means the physical and mental state of an animal in relation to the conditions in which it lives and dies” (World Organisation for Animal Health, 2019). Animal welfare includes the awareness of conditions in which animals are used for scientific investigation, testing (Olsson *et al.*, 2016), hunting (Byrd *et al.*, 2017), in zoos (Shani & Pizam, 2008), fabrics like cashmere, silk, and feathers (PETA UK, 2018), and decreasing animal discomfort (Petrie, 2016). The Vegan Society (founded in 1944) and PETA - People for the Ethical Treatment of Animals (founded in 1980) were founded in order to protect animal rights. Both organizations advocate vegan and vegetarian lifestyles, as well as fighting for animal protection (Lund *et al.*, 2019). The animal protection orientation is understood as the ethically adequate use of animals for consumption (Lund *et al.*, 2019), and animal welfare means avoidance of animal suffering of any kind, and caring for animal life (Greenebaum, 2012). Vegans are part of a community that embraces humans and animals. Vegan’s philosophy and community are the support system that allows vegans to live their lifestyle to the fullest (Cherry, 2006). Moreover, the necessity of interaction between likeminded people (Clark *et al.*, 2019) is strengthened within the tribe, allowing a support system that vegans might not otherwise find in their usual social circle (Earle & Hodson, 2017). The overall standards shared among vegans are about animal welfare, environment, and health (Greenebaum, 2012). Contentment in vegan tribes is the knowledge that animals are not harmed, and are included in society (Da Silva *et al.*, 2019). Therefore, the union between individuals seeking the same animal welfare perspective is more likely to contribute towards happiness and fulfilment when belonging to a tribe (Lund *et al.*, 2019). So, the following hypothesis is proposed:

H3: Animal welfare influences the willingness to belong to a vegan tribe.

6.2.2.4. The Role of Social Influence

Social influence occurs when life style, activities, and opinions impact the behaviors and actions of others (Markowski & Roxburgh, 2019). Direct family and close friends can impact individuals with their assessments and feelings, changing decisions and attitudes

(Wescombe, 2019). Social influence can occur nowadays direct or indirectly, by pressure from a close circle of people or from anonymous individuals via social networks (Tan & Ooi, 2018). Understanding social influence helps comprehending social actions, decision-making, and public opinion (Peng *et al.*, 2017). The concept of social influence is deeply rooted in individuals, since the need to be part of a tribe, and to be among those that think and believe in the same causes is a human feature (Clark *et al.*, 2019). Individuals attempt to connect with others, acting and thinking similarly to their tribe (Varshneya *et al.*, 2017). Emotions, opinions, and behaviors are influenced by others (Wood & Hayes, 2012). Social influence leads people to change behaviors, feelings and thoughts, to aim being part of a tribe, or to the willingness to fit in (Wescombe, 2019). Individuals that change attitudes and behavior in order to belong to a specific tribe or to the society are strongly socially influenced (Wescombe, 2019). Vegans feel more secure surrounded by their own, ensuring there are no criticism and no negative attitudes towards their life choices, and showing that no meat consumers are still ostracized from the prevailing beliefs (Clark *et al.*, 2019). Food choices are a physical inevitability and usually occur within tribes, family, and friends and work colleagues' groups. Individuals are frequently meat consumers, so, since eating is also a social moment, a vegan might have significant challenges, socially and communicatively (Romo & Donovan-Kicken, 2012) when it comes to the eating experience. A vegan can be considered a social deviant (Romo & Donovan-Kicken, 2012) because he/she goes against conventional social norms, i.e., by deciding to follow a life free of animal products. According to Romo and Donovan-Kicken (2012), vegetarians choose to harmonize conversations regarding their lifestyle in order not to exasperate non-vegetarians that sometimes are aggressive towards them. Consequently, social eating, and social interactions are difficult when choosing veganism, because others (non-vegans) tend to criticize and condemn vegans by pointing out several aspects, like considering that veganism is not healthy (Romo & Donovan-Kicken, 2012). Therefore, it appears to be more comfortable to be around the ones that are likeminded and that share a common interest (Clark *et al.*, 2019). So, the following hypothesis is proposed:

H4: Social influence impacts the willingness to belong to a vegan tribe.

6.2.2.5. The role of Idealism

The question of being right or wrong is essentially motivated by ethical values (Forsyth, O'Boyle & McDaniel, 2008). Idealism refers to the belief that when the correct conduct towards the world is well-founded on ethical principles the desired outcomes can always be achieved (Guyer & Horstmann, 2018). Avoiding harming others is a life motto for idealistic individuals: high idealism leads to positive consequences, and harming others leads to negative consequences (Cooper, 2018). Optimistic individuals rely on the triumph of the goodness in people, and idealism validates the humanity in individuals and can open ways to the world salvation (Guyer & Horstmann, 2018). On the other hand, individuals with lower idealism believe that, occasionally, some kind of harm is unescapable and therefore they have to accept that the world runs on good and bad. Vegan tribes live accordingly to the moral ethical beliefs that protecting animals, the environment, and others is a way to be part of a world, where egoism and disbelief in goodness is currently taking over. Idealistic individuals also believe in not harming any living being, and they want to be the cause of their well-being, aching for a better world (Forsyth *et al.*, 2008; Tobler *et al.*, 2011). Since vegans are commonly set aside by most people, because of their lifestyle and high ethical morals, vegans look forward to be with others that think and live like them, i.e., which have the same ideals (Forsyth *et al.*, 2008). Vegan tribes base their arguments to stop animal exploitation on moral values, and as idealist individuals are dedicated to this cause. They believe that in the long run the goodwill is going to prevail (Guyer & Horstmann, 2018). Individual moral ideologies are important because they influence a wide range of decisions, even the decision to be or not part of a group of people (Wang & Calvano, 2015). The tendency to join a vegan tribe increases due to the fact that idealists seek avoiding harming animals (Cooper, 2018). Ethical attitudes, not harming others and helping them, is predictably done by highly idealistic individuals that yearn for gathering with people who share the same ideals (Wang & Calvano, 2015). Therefore, the following hypothesis is proposed:

H5: Idealism influences the willingness to belong to a vegan tribe.

6.2.3. Understanding the Effects of Vegan Tribalism

6.2.3.1. Involvement with Vegan Products

Involvement is influenced by individual interests, lifestyle and standards (Jeseviciute-Ufartiene, 2019), and it is a variable that shows how something induces interest or motivation (Caro *et al.*, 2011). Involvement means a special attention and concern with an object, activity, product, advertisement, among others, that might be self-relevant to someone (Ghali, 2019). Involvement happens when there is curiosity, and a connection, commitment, or concern with a particular subject or product is made (Ghali, 2019). Involvement impacts the decision-making process that leads the individual to purchase (Michaelidou & Dibb, 2006). Involvement is influenced by values and benefits, and can decide the purchase of products (Ghali, 2019). Individuals that search for information are already motivated, and are influenced by the involvement they developed (Baldini & Ponchio, 2018). Celsi and Olson (1988), similarly to Zaichkowsky (1994), perceive personal relevance as the essential characteristic of involvement – that is, involvement with an object, activity or situation which is perceived to be self-relevant. Involvement is defined as an “unobservable state of motivation, arousal or interest” (Havitz, Dimanche & Bogle, 1994, p. 39) towards a product or activity evoked by a stimulus or situation. Involvement can be fairly important in understanding vegans’ choices and resolutions towards their lifestyle (Strubel & Petrie, 2016). Involvement requires information, research, and careful analysis of substitutes (Browne & Kaldenberg, 1997). Involvement has three distinct approaches: physical, which refers to the concern in the products features; situational, related to short-term events, and mutable due to new objectives; and the personal approach that is subjective and is influenced by moral principles (Baldini & Ponchio, 2018). Involvement might comprise cognitive conflict influenced by the distress of doing the wrong thing (Rokonuzzaman *et al.*, 2020). According to Laurent and Kapferer (1985), there are five aspects related to involvement: interest, pleasure, sign, risk probability, and risk importance. Interest is related to the importance for the individual. Pleasure is associated to a gratifying value. Sign points out the alleged symbol value. The risk probability aspect is the chance of making the wrong decision. Finally, the risk importance aspect regards to understanding the consequences of making a bad decision. So vegan tribes are deeply

involved in vegans' decision-making because their attention towards others, animals, and the environment are issues they care deeply about: it is in their essence not to harm and to make the correct choices. Vegan tribalism can have a positive impact in the involvement with vegan products, since members of a vegan tribe aim to consume only eco-friendly and vegan products that do not impact the world negatively. Vegan tribalism has a strong link to involvement in vegan products, since it supports their lifestyle (Caro *et al.*, 2011). Only by consuming vegan products can vegan tribes live accordingly to their morals, beliefs and life-style (The Vegan Society, n.d.; Greenebaum, 2012; Tunçay Son & Bulut, 2019). The vegan tribes' involvement with vegan products and lifestyle is crucial and plays a significant role in their belief system (Tunçay Son & Bulut, 2019). As a result of the research, the following hypothesis can be suggested:

H6: Vegan tribalism has a positive impact in the involvement with vegan products.

6.2.3.2. Word of Mouth (WOM)

WOM is the exchange of information linked to products or services between people not related to the company that is providing said products or services (Zhanga *et al.*, 2018). During this communication, the information can be positive or negative according to the sender's experience, so WOM can have a positive or negative impact on a product or service (Zhang *et al.*, 2018). WOM is the original form of communication in the marketing world (Varshneya *et al.*, 2017), and social relations are the key to trigger WOM (Abrantes *et al.*, 2013). To sum up, WOM is the transmission of a personal informal assessment (Wee *et al.*, 1995), resulting from experience regarding products, services and brands (Keller & Fay, 2012), and understood by others as more reliable since it is not information transmitted by a company (Zhang *et al.*, 2018). The intention to recommend is a direct result of the connection with a product or service (Ranaweera & Jayawardhena, 2014). WOM is viewed as one of the most persuasive influences in consumer behavior (Zhang *et al.*, 2018). Understanding the importance of WOM is indispensable in order to anticipate customer's behavior, purchases, and retention (Huang *et al.*, 2017). According to Huang *et*

al. (2017) WOM is an advertising tool useful to reach new customers. Reliance, trust, and familiarity impact word of mouth (Lien & Cao, 2014). In other words, the receiver is influenced by the closeness of the sender (Ranaweera & Jayawardhena, 2014). Usually, WOM occurs amongst close social relations, where there is like-mindedness (Ranaweera & Jayawardhena, 2014). But although WOM happens in the family and friends' circle, that is not always the case when it comes to vegans, since veganism is sometimes not welcomed in this circle (Markowski & Roxburgh, 2019). Vegans occasionally see their beliefs questioned by those who do not follow this lifestyle, and tend to be harassed and discredited (Twine, 2017). Therefore, it seems logical that vegans search for face-to-face product information in the circle where they are understood and accepted (Maffesoli, 2016), avoiding the social stigma towards vegans by non-vegans who don't accept their lifestyle (Cherry, 2015). Vegan tribes recommend the vegan lifestyle to others – vegans or non-vegans – when they are sure that they are among individuals that accept them and understand veganism as being positive (Maffesoli, 2016). Therefore, the following hypothesis can be formulated:

H7: Vegan tribalism impacts WOM.

6.3. The Moderating Role of Attitude towards Consumption of Vegan Products

Attitude is a positive or negative feeling towards products, people, goals, objects, and issues (Kaiser & Byrka, 2015). The feeling that an individual forms is based on the information gathered in order to know how to feel or think regarding a product, person, issue, etc. (Newhouse, 1990). Conscious and chosen attitudes influence behavior (Ajzen, 1985; Perugini, 2005). Explicit attitude discusses attitudes mentioned in social psychology usually referring to reactions towards stimulus, voiced in writing or verbally. Regarding ethical consumption, and conscious and chosen attitudes, explicit attitudes are widely studied (Carrigan & Attalla, 2001; Singh *et al.*, 2012; De Pelsmacker *et al.*, 2005). Attitude is what leads the process of making a choice, since it outlines a positive or negative evaluation of behaviors and objects (Ajzen, 1991). Confident attitude also has more impact

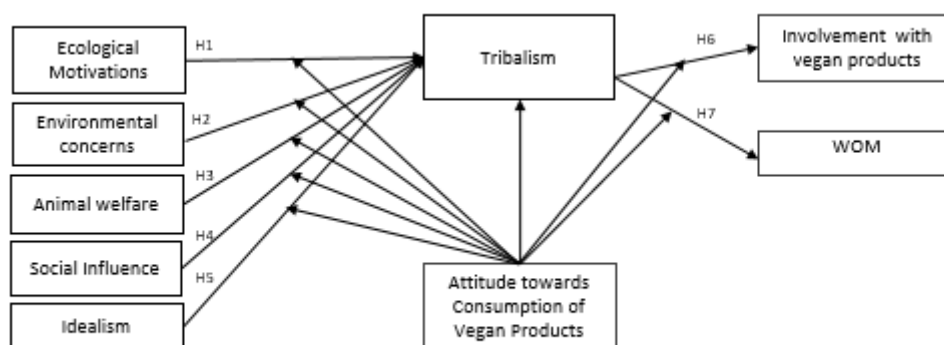
in future behaviors, consequently being more persistent and resistant over time (Fishbein & Ajzen, 1975; Rucker *et al.*, 2014). The Theory of Planned Behavior (Ajzen, 1991) recognizes motivational aspects as impacting behavior and attitude, and it does not depend on whether the product or issue is positively or negatively evaluated (Ajzen, 1991). The individuals expose their behavior only if attitude, subjective norm, and perceived behavior are significant (Ajzen, 1991). In some circumstances, only attitudes have significant impact. In other cases, these three predictors may have expressive influences (Ajzen, 1991). Vegan tribes look for support where their philosophy is understood, and their group offers a supportive network (Cherry, 2006). Therefore, a positive attitude towards veganism may amplify the willingness to belong to a tribe, and to adopt its consumption patterns and lifestyle (Tunçay Son & Bulut, 2019). Consequently, attitudes towards veganism might moderate the proposed relationships.

6.4. Method

The conceptual research model and the suggested relationships between the study variables are presented in figure 3. This model depicts the proposed hypotheses and relies on the frameworks developed by Teng and Lu (2016), Smith and Paladino (2010), and Ueasangkomsatea and Santiteerakul (2016).

Figure 3

Conceptual Model – Paper 3



6.5. Sample and Data Collection

6.5.1. Sampling

This study is based on two samples, 224 Portuguese vegans and 356 Brazilian vegans. The sampling was performed sharing the questionnaire in four Facebook vegan groups in Portugal, with a total of 82,500 members, and four groups in Brazil, with a total of 202,400 members. The first question assessed was if the respondent was a vegan or not. Most of the respondents are female, between 18 and 33 years old, having a university degree, employed and with an income between 501€ and 1499€ (see Table 19).

Table 19

Demographic profile of the respondents

Category	Portugal	Brazil
Male	31	39
Female	193	317
Age		
10-17	6	12
18 - 25	92	126
26 - 33	61	129
34 – 41	31	59
Over 41	34	30
Educational background		
Secondary school	87	114
Higher education	137	242
Occupation		
Student/Student worker	74	154
Employed	128	154
others	22	46
Household members		
1 -2	115	164
Over 3	109	192
Income		
Less than 500€	16	61
501€ - 1,499€	127	151
Over 2,000€	81	144

6.5.2. Measures

The questionnaire is based on tested scales, translated and adapted from past relevant literature. All the items were measured on a seven-point Likert scale (1 = strongly disagree to 7 = strongly agree). Metrics can be found on table 20, identifying the origin of the metric and the standardized regression weights.

Table 20

Results of confirmatory factor analysis

Construct	Metrics	SRW	CR
Tribalism (TRIB) Adapted from Zhou <i>et al.</i> , 2012.	1. I would feel a loss if the vegan community did not exist more.	0.809	0.938
	2. I really care about the destiny of the vegan community.	0.847	
	3. I am very loyal to the community vegan.	0.881	
	4. I intend to maintain the relationship that I have with the vegan community.	0.884	
	5. The relationship I have with the vegan community is important to me.	0.911	
Ecological motivations (EM) Adapted from Yadav & Pathak, 2016.	1. It is very important that production of vegan products respect animal rights.	0.835	0.946
	2. It is very important that vegan products have been prepared in an ecological environment.	0.906	
	3. It is very important that vegan products are packaged ecologically.	0.93	
	4. It is very important that vegan products have been produced in a way that does not unbalance nature.	0.935	
Environmental concerns (EC) Adapted from Yadav & Pathak, 2016.	1. The balance of nature is very delicate and can be easily upset.		0.841
	2. Human beings are severely abusing the environment.	0.673	
	3. Humans must maintain the balance with nature in order to survive.	0.773	
	4. Human interferences with nature often produce disastrous consequences.	0.819	
	5. Humanity is abusing the environment.	0.75	
Animal welfare (AW) Adapted from Graaf <i>et al.</i> , 2016.	1. Animals must be kept in their natural habitat.		0.828
	2. It is important that animals can behave naturally.	0.734	
	3. I care about the welfare of animals.	0.872	
	4. Animals must not suffer.	0.755	
	5. The idea of a “natural environment” applies to both domestic and wild animals.		

	6. Companies must think about their profits, but also about animals.	0.579	
	7. Companies must think about animals as well as their market value and costs.		
Social Influence (SI)	1. My friends often recommend vegan products to me.	0.841	0.854
Adapted from Varshneya <i>et al.</i> , 2017.	2. My friends usually go shopping for vegan products with me.	0.723	
	3. My friends often share their experiences and knowledge about vegan products with me.	0.869	
Idealism (ID)	1. I respect the principles and universal values when doing judgments.	0.783	0.844
Adapted from Leonidou <i>et al.</i> , 2013.	2. There are universal principles or ethical rules that can be applied to most parts of situations.	0.879	
	3. Regardless of circumstances, there are principles and overlapping rules.	0.669	
	4. We must prevent others from taking risks.	0.693	
Involvement with vegan products (INV)	1. Vegan products are important to me.	0.926	0.886
Adapted from Teng & Lu, 2016.	2. Vegan products remain interesting to me.	0.906	
	3. I am concerned about animal issues.	0.764	
	4. I am very involved in finding and reading information about vegan products.	0.628	
Word of Mouth (WOM)	1. I recommend vegan products to many people.	0.78	0.912
Adapted from Carroll & Ahuvia, 2006.	2. I tell my friends about vegan products.	0.848	
	3. I try to spread the benefits of vegan products.	0.916	
	4. I do a lot of positive advertising for vegan products.	0.849	

Note: CR - critical ratio; SRW - standardized regression weights.

Confirmatory factor analysis was done to measure scales psychometric properties and measurement model fit using AMOS 25. The model shows a good fit (IFI=0.944; TLI=0.938; CFI=0.944; RMSEA=0.051; $\chi^2/df=2.515$). Composite reliability (CR) and the average variance extracted (AVE) were calculated. All scales presented values above 0.7 on CR and above 0.5 on AVE, which are according to the recommendations (Hair *et al.*, 2010). Discriminant validity is supported by the fact that all correlations between the constructs are smaller than 1 and the squared correlations calculated for each pair of constructs is always smaller than the variance extracted for corresponding constructs (Shiu *et al.*, 2011), thus confirming the discriminant validity (see Table 21).

Table 21

Square Correlations, Cronbach's Alpha composite reliabilities, and average variances extracted

Constructs	SD	EM	EC	AW	SI	ID	TRIB	INV	WOM	AVE	CR
EM	0.5301	0.941								0.814	0.946
EC	0.3782	0.154	0.921							0.571	0.841
AW	0.3493	0.085	0.220	0.805						0.551	0.828
SI	1.7044	0.069	0.181	0.049	0.852					0.662	0.854
ID	1.0104	0.250	0.228	0.093	0,05	0.837				0.578	0.844
TRIB	1.4029	0.188	0.177	0.167	0.080	0.240	0.938			0.752	0.938
INV	0.7211	0.085	0.253	0.213	0.096	0.175	0.229	0.872		0.664	0.886
WOM	0.9198	0.093	0.176	0.139	0.274	0.216	0.313	0.423	0.910	0.722	0.912

Note: SD- Standard Deviation; Diagonal in bold - Cronbach's Alpha; CR - Composite Reliability; AVE – Average Variance Extracted.

6.5.3. Common Method Bias

Both a Harman's single factor test and a common latent factor analysis were conducted to identify the common variance (Podsakoff *et al.*, 2003). The Harman's test with SPSS 25.0 showed that any factor could explain more than 11.19% of the variance, and there were 7 factors with eigenvalues-greater-than-one explaining 70.129% of the total variance (Norman, 1988). In addition, a confirmatory factor analysis was done limiting all items of the model to load on a common single factor (Podsakoff *et al.*, 2003). The resulting fit indices show the model did not provide an acceptable fit ($X^2/df = 20.349$; incremental fit index = 0.260; Tucker–Lewis index = 0.207; comparative fit index 0.258; Root Mean Square Error of Approximation = 0.183), so the common method bias does not seem to be a problem.

6.6. Findings and Discussion

The final model shows a good fit (IFI=0.944; TLI=0.938; CFI=0.944; RMSEA=0.051; $X^2/df = 2.515$). A multi-group analysis was performed to test the moderation effects of attitude

towards consumption of vegan products considering two groups: the high attitude group, with 162 respondents; and the low attitude group, with 418 respondents. Nationality group analysis was also performed: 224 Portuguese and 356 Brazilian respondents. Metric invariance was tested, and CFI differences below 0.01 were found in both models, supporting the expected metric invariance (Cheung & Rensvold, 2002).

Table 22

Results

	General (n=580)		More favorable ATV (n=418)		Less favorable ATV (n=162)		Portugal (n=224)		Brazil (n=356)	
	srw	p	srw	p	srw	p	srw	p	srw	p
H1 Ecological → TRIB	0.126	0.004	0.122	0.015	0.159	0.108	0.149	0.008	0.133	0.085
H2 Environment concerns → TRIB	0.083	0.086	0.063	0.249	0.082	0.409	0.093	0.127	0.038	0.655
H3 Animal welfare → TRIB	0.122	0.008	0.069	0.17	0.178	0.077	0.035	0.528	0.252	0.001
H4 Social influence → TRIB	0.065	0.148	0.063	0.225	0.017	0.859	0.051	0.381	0.067	0.348
H5 Idealism → TRIB	0.179	***	0.184	***	0.047	0.667	0.203	***	0.118	0.108
H6 TRIB → IVP	0.239	***	0.059	0.279	0.264	0.004	0.181	0.001	0.308	***
H7 TRIB → WOM	0.323	***	0.233	***	0.324	***	0.284	***	0.38	***

*Notes: (1) two-tailed test: *** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$; n.s- not significant ($p > 0.05$); (2) ATV- Attitude towards veganism; IVP- Involvement with vegan products*

Results on table 22 show that ecological motivations, environmental concerns, and animal welfare have a significant influence on the willingness to belong to a vegan tribe, therefore supporting H1 (R=0.126; P=0.004), H2 (R=0.083; P=0.086), and H3 (R=0.122; P=0.008). Radnitz *et al.* (2015) mention that ecological motivations have a significant influence on

vegan lifestyle (Janssen *et al.*, 2016), because vegans want to preserve the environment and all living beings, therefore influencing eco-friendly purchases (Tobler *et al.*, 2011; Greaves *et al.*, 2013). Ecological motivations are linked to conservational concerns about animals (Honkanen *et al.*, 2006) and ecological responsibilities (Faria *et al.*, 2016).

Idealistic people concerned with the balance of our eco systems (Cooper, 2018), with the preservation of life, and with the future of the planet (Greaves *et al.*, 2013) are apparently more prone to get together to share their principles, to reinforce their values and their strengths (Guyer & Horstmann, 2018), to carry on with a vegan lifestyle and to disseminate it (Cherry, 2015). Belonging to a vegan tribe and being loyal to its beliefs are motivated by the wish and need to protect the environment (Ruane & Wallace, 2015), and by enthusiasm to live eco-friendly (Wang *et al.*, 2017).

According to the results, social influence ($R=0.065$; $P=0.148$) does not impact the willingness to belong to a vegan tribe, therefore not supporting H4. According to Varshneya *et al.* (2017) as well as Polivy and Pliner (2015), social influence may change individual habits, thus supporting its impact on tribalism. Romo and Donovan-Kicken (2012) however pointed out that vegans synchronize their conversations with non-vegans in order to be accepted in a social gathering, and to keep safe from hostile conversations, which could justify the lack of influence found in this investigation. In fact, what impacts the willingness to belong to a vegan tribe is the condition of being an individual that cares for the world, nature, animals and other individuals. What makes a vegan be part of a tribe is the need to be where they are understood (Clark *et al.*, 2019), where others live like them (Forsyth *et al.*, 2008), and where they are not ostracized (Cherry, 2015).

At the same time, idealism influences the willingness to belong to a vegan tribe ($R=0.179$; $P=***$), thus supporting H5. According to our results, vegans search for others that have the same ideals because the comprehension between them is easier and they are able to spread the word on protecting the environment (Cooper, 2018). As mentioned by Forsyth *et al.* (2008) and Tobler *et al.* (2011), idealistic individuals believe in not harming people, animals and nature, so vegans yearn to join other idealistic individuals in order to live in their ideal world. Vegan tribes are more concerned about ethical factors – tribe members

need their belief system to be understood and accepted (Guyer & Horstmann, 2018), and it seems easier to be around the ones that share the same ideals (Ruby, 2012).

Results show that vegan tribes lead to a positive involvement with vegan products ($R=0.239$; $P=***$), therefore supporting H6. In fact, vegan tribes tend to share positive experiences regarding vegan products (Browne & Kaldenberg, 1997). Only when consuming vegan products can vegans live according to their philosophy (Carus, 2010), i.e., being involved in the search and gathering of the information about vegan products that fulfils all the necessities and all the ideological rules that allow their consumption. Involvement is essential in understanding vegans' needs and solutions concerning their routine (Strubel & Petrie, 2016).

Additionally, being part of a vegan tribe impacts WOM ($R=0.323$; $P=***$), therefore supporting H7. Keller and Fay (2012) have shown that regarding products and services the information is much more trustworthy and understandable when transmitted between individuals with the same principles, since social relations generate WOM (Abrantes *et al.*, 2013). Based on our results, individuals in vegan tribes, exchange information regarding the involvement with vegan products (Maffesoli, 2016; Huang, *et al.*, 2017).

Regarding the moderation effects of having a more or less favorable attitude towards the consumption of vegan products, our results show that ecological motivations and idealism are more significant in individuals with a more favorable attitude towards the consumption of vegan products (Ciocchetti, 2012). The results also show that ecological motivations (Tobler *et al.*, 2011; Radnitz *et al.*, 2015) and idealism (Greenebaum, 2012) are essential variables regarding tribalism, especially when attitudes are more favorable. In fact, what motivates vegan tribes is what allows them to live according to their philosophy (Wilson, 2019). The protection of the eco-system and the subsequent need to use products that certify that this eco-system was not harmed motivate vegans. The visibility about the concerns regarding animal welfare are constant (OIE, 2019) and motivate individuals to protect and care for animals (Greenebaum, 2018), leading to a positive attitude towards their protection and to the adoption of a vegan lifestyle. Taking active action in the protection of animals, the way they live, and the way in which they are cared for lead

individuals to a more meaningful and rewarding life, and brings them closer to the other individuals who share the same values – the tribe (Greenebaum, 2018).

Regarding the involvement towards vegan products and WOM, results show that vegan tribalism impacts both variables. In fact, it is among individuals with less favorable attitudes towards the consumption of vegan products that these variables show the higher influence of tribalism (Ranaweera & Jayawardhena, 2014). The vegan tribe provides believable information about vegan products therefore impacting both involvement and WOM (Wee *et al.*, 1995), and these effects tend to be higher when we are newcomers and our attitude is still being formed. These results can be explained by the role of the vegan tribes as the main and more reliable source of information, socialization and “education” (Lien & Cao, 2014; Ranaweera & Jayawardhena, 2014). When consuming vegan products, vegan tribes will stand for their lifestyle, and follow their moral and ethical commitment regarding the protection of nature (The Vegan Society, n.d.; Carus, 2010; Greenebaum, 2012; Tunçay Son & Bulut, 2019).

As for national differences, our study shows that idealism influences the willingness to belong to a vegan tribe especially among the Portuguese population. Nevertheless, Brazil is a former Portuguese colony and has similarities regarding behavior (Feldman-Bianco, 2001; Neto, 2012). Several studies comparing these two countries provide insight that helps us understand this phenomenon: the perception of immigrants (Gondim *et al.*, 2018); burnout (Maroco & Campos, 2012); brand loyalty (Haryanto *et al.*, 2016); environmental behavior (Côttes *et al.*, 2016). According to Hofstede Insights (n.d.), the Portuguese society is a more individualistic society than the Brazilian. Brazilians tend to live close to the extended family, and that might explain the lower probability of a tribe influencing their ideological views. When it comes to the Portuguese, the long-term relationships are wider than family: there are other interactions playing a crucial role in their relationships, and namely tribes that are in sync with their philosophy might influence life-styles. Animal welfare influences the willingness to belong to a vegan tribe especially in Brazil, probably because in Portugal the rules regarding the safety of animals are already very rigidly implemented, and Portuguese are very accurate in following rules; they believe and respect equality, harmony and ideals, and caring for all living beings. Brazilians are more easy-going; they live in the moment, are more indulgent, act easily on impulses, and they are

willing to take the changes further. However, if Brazilians are given the choice of expanding outside their immediate group, this will definitely impact their involvement with vegan products and WOM.

6.7. Contributions and Limitations

6.7.1. Theoretical Contributions

Vegan consumption is a fully plant-based diet where all animal products and by-products are rejected (Ruby, 2012). Modern consumption has changed over the years as well as the reasons to choose what to eat or not to eat. Veganism has been chosen as a diet during the World War II because of food-shortage (The Vegan Society, n.d.) but nowadays people tend to make choices according to health benefits, environment protection, and animal well-being. Veganism has grown all over the world as a lifestyle that protects all living beings. Nonetheless the literature shows that little research is produced regarding reasons that make individuals be a part of a vegan tribe. The present study brings some light in understanding vegan tribalism. Our investigation presents 3 major contributions: 1) it establishes which variables influence the willingness to belong to a vegan tribe, showing that individual and ethical variables are dominant; 2) the second contribution is related to a broader view concerning antecedents and consequents, by forming a chain of effects between causes and results; and 3) it introduces the moderating role of attitude towards the consumption of vegan products, and assesses its influence over the proposed hypotheses. Previous studies have shown that individuals try to bond with others by expressing a behavior similar to that of the tribe (Tunçay Son & Bulut, 2019). People in a vegan tribe are sometimes considered as social outcasts, projecting no social importance or influence (Romo & Donovan-Kicken, 2012). Our study supports the idea that being part of a vegan tribe is related to the need to be around like-minded individuals (Clark *et al.*, 2019), and not because being vegan is socially relevant (Romo & Donovan-Kicken, 2012). Additionally, our study introduces the effects of national culture, comparing Brazilians and Portuguese vegans.

6.7.2. Practical Contributions

Besides the academic contributions, our investigations show that vegan tribalism is mainly related to the need to be around others that have the same lifestyle and philosophy, and social influence does not influence the willingness to belong to a vegan tribe. The study also reveals that ideological issues influence individuals to be in a vegan tribe. Additionally, ecological motivations, environmental concerns, and animal welfare are the main reasons to become vegan. Veganism is a lifestyle that avoids all animal products of any kind. This research can assist actions where the protection of animals is key, contributing for a better perception of vegan tribes' importance in this field, and rendering their role as more significant and persuasive.

This research is also useful to help understanding what influences vegans and vegan tribes, so that companies and their marketing departments can explore what drives vegan tribes, and how to adapt their businesses to these clients' needs and ideology. The study shows how these consumers behave and think when choosing a tribe that will influence the purchase of vegan products. Our results give important clues to both brands and companies present in the vegan markets, as well as to organizations and government institutions dealing with animal welfare and environmental protection: the way vegans behave might signalize future directions for general policies and consumption trends.

6.7.3. Limitations and Future Research Directions

This investigation is based on cross-sectional data, which does not allow causality inferring, showing relationships but not causality among the variables: the ability to identify causality between the variables is therefore limited.

The proposed model ought to be replicated in other countries to comprehend conducts, influences and attitudes towards the willingness to be part of vegan tribes and vegan products, especially when different religions are dominant. Although Brazilians and Portuguese were expected to have similar characteristics due to historical issues, cultural

aspects are relevant. The vegan movement benefits from trying to understand what drives this lifestyle. Consequently, this study intends to scan veganism, vegan tribalism, and purchase behaviors, by seeking to understand what influences the need or wish to be part of a tribe.

As recommendations for future research, the model could be tested by using other variables like gender, age, personality traits, and sensitivity which can prove to be relevant drivers of vegan tribalism.

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Chapter VII – Let's be vegan? Antecedents and consequences of involvement with vegan products: vegan vs non-vegan

Abstract

Purpose: The purpose of this investigation is to understand what influences the involvement with vegan products comparing vegan and non-vegan individuals. This study presents eco-motivated antecedents (ecological motivations, environmental concerns, animal welfare) and personal antecedents (social influence, idealism). Also, the influence of involvement with vegan products on eudemonic and hedonic happiness, purchase intention and price sensitivity. The impact price sensitivity has on purchase intention is presented.

Approach: The research uses a structured questionnaire to collect information from two cross-sectional samples, 580 vegans and 517 non-vegans, collected from four vegan groups on Facebook, with a total of 284.900 members. Structural Equation Modelling (SEM) is used to test the proposed hypotheses.

Findings: Results show that amongst vegans, ecological motivations and social influence do not impact involvement with vegan products. Vegans choose this lifestyle mainly due to animal protection, environmental concerns, and their ideological views. Regarding non-vegan, idealism does not impact involvement with vegan products, probably due to the fact that they have not strong moral views as vegans, since they do not stop ingesting meat. At the same time, social influence becomes a relevant predictor.

Limitations and future lines of research: A cross-sectional study does not allow inferring causality. The model could be tested by introducing variables like gender, age and personality traits, sensitivity and religion, which could be pertinent drivers of involvement with vegan products in vegan and non-vegan groups.

Originality: This investigation compares, the impact of personal and eco-motivated determinants, comparing vegan and non-vegans regarding the involvement with vegan

products. It also compares how involvement with vegan products predicts consumer behavior patterns among vegan and non-vegans.

Keywords: involvement with vegan products, personal and eco-motivated determinants; consumer behavior vegan, non-vegan.

7.1. Introduction

A vegan is someone who does not ingest or use animal products of any kind (The vegan society, n.d.). The vegan diet is centered on plants, not including animal products like meat or fish, dairy products, or even honey (Piia *et al.*, 2019). Usually, vegans follow this lifestyle because of ethical, health, and environmental motivations. Tied to animal rights movements, vegans aim to eliminate all practices of animal cruelty and abuse (Harmon, 2020). According to Wrenn (2019), veganism pursues to eliminate all forms of use and cruelty towards animals for food, clothing or other purposes. So, being vegan is not only abstain from eating animals, but also not using products made of animals, like clothing and make-up, and not using products that harm animals' habitat (Wescombe, 2019).

According to Innova Market Insights, the annual growth of vegan products is of 58%, between 2015 and 2019 (Market Insights, n.d.). In 2018 the Mintel Global New Products Database mentions that the United Kingdom launched the most vegan food products in the world (Market Insights, 2018). Also, according to Mintel Press Office, during 2018 in Europe, one out of ten new food products, was either vegan or had no animal products ingredients claim. Based on numbers published in 2019 by The Economist, it was possible to verify that the total number of vegans in the world would be approximately 79 million in January 2021 (The Economist, 2019).

Academic studies have shown that some vegans choose veganism due to health reasons (Dyett *et al.*, 2013), but animal welfare concern is the main reason to become vegan (Janssen *et al.*, 2016; Kerschke-Risch, 2015; Radnitz *et al.*, 2015; Wrenn, 2017). Individuals become vegan for numerous purposes, health, food taste, and to avoid animal driven products (Ciocchetti, 2012). Extreme motivated vegans reject all animal-based products (Janssen *et al.*, 2016). Novoselova *et al.* (2005) mention that animal welfare, environmental and health issues have a positive consequence on customer purchase regarding food intake. Therefore, being vegan helps to protect the environment, as non-plant-based consumptions are less harmful to the planet (Carlsson-Kanyama & González, 2009). Animal welfare is not only the concern with animal's health, lifespan, but also with their physical and mental state (OIE - Terrestrial Animal Health Code, n.d.). Animal welfare encompasses also the avoidance of animal testing (Olsson *et al.*, 2016), used in recreational situations

(Shani & Pizam, 2008; Petrie 2016; Byrd, Lee & Widmar, 2017; PETA UK Annual Review, 2018). Greenebaum (2012) classifies vegans as for their morals, norms and values. An ethical diet and way of life are the main principals for vegans (Grauel, 2016). Since veganism also includes products besides food, individuals can be vegan by diet or lifestyle (Grauel, 2016). According to Belasco (2008), diet adoptions have three dimensions: responsibility, identity and convenience. Although for vegans, responsibility is of great importance, identity and identification is also very important and can, sometimes, play a main part in vegan individuals (Ciocchetti, 2012).

Veganism is a very strict lifestyle since all animal-derived products are excluded from all life areas (Tunçay, 2016; Piia *et al.*, 2019). While studies focus on the reasons why individuals become vegans, research about what veganism, as a lifestyle, entails is still limited (DaSilva, Hecquet & King 2019). Additionally, what involves vegan choices and vegan consumptions among the non-vegans, is yet not deeply studied (Earle & Hodson, 2017; Bagci & Olgun, 2019). Research shows veganism not only as a limiting diet, but also a choice that involves a social identity, where individuals tend to join groups with other non-meat-eaters (Rosenfeld, 2018). Some studies have shown what involves being vegan, but not individual differences between vegans and non-vegans regarding variables related to personal and eco-motivated issues (Pfeiler & Egloff, 2018). At the same time, research regarding influence of vegan lifestyle on well-being is still limited (Costa, Gill, Morda & Ali, 2019) as well as on purchase intention and price sensitivity (Rex & Baumann, 2007; Ghali, 2019).

With regard to these gaps, this study intends to understand what influences the involvement with vegan products (DaSilva, Hecquet & King, 2019) among vegans and non-vegans (Earle & Hodson, 2017; Bagci & Olgun, 2019). This study proposes to understand how involvement with vegan products impacts individuals' well-being (Costa, Gill, Morda & Ali, 2019), purchase intention and price sensitivity as well (Rex & Baumann, 2007; Ghali, 2019).

This investigation is based on two samples, the first with 580 vegan respondents and the second with 517 non-vegan respondents, collected from four vegan groups on Facebook, totaling 284.900 members. Structural Equation Modelling (SEM) is used to test the proposed hypotheses. This study compares personal and eco-motivated determinants

between vegan and non-vegans concerning involvement with vegan products. Additionally, a comparison on how involvement with vegan products can foresee consumer behavior amongst vegan and non-vegans.

This paper starts with an introduction that presents a brief summary of the studied topic, stating gaps and main research objectives. Subsequently, this study provides a theoretical background and develops hypotheses. Section 3 presents a conceptual model a used method, while section 4 shows the sample and data collection. Section 5 introduces the results. The main contributions and limitations of provided by this research are in Section 6.

7.2. Conceptual Development and Research Hypotheses

7.2.1. Veganism

Veganism is more than a diet, it is a manifestation of a lifestyle through food (Intel, 2016). Veganism is a self-expression of identity and values (DaSilva *et al.*, 2019) that has gained more interest throughout recent (Doyle 2016). Besides being healthy diet choice, veganism is also a lifestyle that entails a philosophy regarding animal welfare and ecological motivations (Doyle, 2016). Cherry (2015) and Greenebaum (2012) have studied vegan motivations, showing that personal and moral reasons are main issues to become vegan. Following an ethical diet and lifestyle are key-points for vegans (Grauel, 2016). Continuing the vegan lifestyle is not only based on the individuals' ethical values, but it appears that having supportive social group, social identification is of great importance in order to keep vegans motivated (Cherry, 2015). It seems that being vegan needs a social support system to maintain this lifestyle (Cherry, 2015). Beverland, Wahl and Groot (2015), reported that the close social circle of vegans sometimes felt veganism as a personal attack towards them, and that being vegan created tension during social and family events. While being vegan is seen and eating healthy and showing concern about animal and the environments (Mortara, 2013), being vegan can raise tension among non-vegans, because of diet restrictions that need to be followed when a vegan is present (Beverland *et al.*, 2015;

Twine, 2017). Veganism focus on sharing common ideals and goals (Moutinho *et al.*, 2007), feeling understood and welcomed (Brignall & Van Valey, 2007).

Individuals defending animal welfare, environment and humankind are willing to choose a vegan lifestyle (Andersen & Tobiasen, 2004; Stolle & Micheletti, 2013; Van Deth, 2014), also expressing moral, political, social, or ecological considerations practices (Kalte, 2020). According to Novoselova *et al.* (2005), animal welfare has a positive outcome on consumer choice regarding food choices. Some consider themselves vegan when it comes to food, but not all follow this lifestyle strictly, as they might use products made of animals (Harmon, 2020). Therefore, some consider themselves vegans just because they follow the food regime, but veganism excludes any animal product. So, if palm oil destroys the Indonesian forest, this product does not follow the vegan principal, as the production of palm oil originated the kill of hundreds of orangutans (Tunçay, 2016). But non-vegans can protect the environment if they choose locally raised meat (Roosevelt, 2006). There are strict vegans that do not consume honey and other vegans that use medications obtained from animals (Beardsworth & Keil, 2011), so a stricter vegan might consider another vegan that eats honey as a non-vegan. Therefore, veganism can be seen as more than a diet, it is a complete change of lifestyle by giving up on all animal products (Francione & Charlton, 2015; Greenebaum, 2018). Nowadays the consumption of vegan products is not only done by vegans but also non-vegans since the interest in healthy and environmentally friendly products is rising (Hsu & Chen, 2014; Popa *et al.*, 2018). Consumers purchase products when these have considerable importance for them or/and follow their lifestyle (Rahman, 2018).

Self-determination theory (SDT) shows that Individuals are aware that their decisions count and have impact (Deci & Ryan, 2000). SDT ties the individual's three basic needs, ability, independence and connection (Deci & Ryan, 2000; Garg *et al.*, 2021), providing a better understanding of their motivations. Every individual wishes to live successfully in their surrounding environment, control the course of his/her life and have meaningful relationships (Deci & Ryan, 2008; Garg *et al.*, 2021). SDT sustains that individuals have a set of reasons to act in a certain way and/or purchase something since they have the notion that their behavior affects the world and that it might help them feel good (Garg, Sachdeva, Singh & Goel, 2021). Furthermore, SDT helps to understand that individuals know that their

behavior led to certain results and mainly in what link the involvement with environmental issues leading therefor, to happiness and well-being (Garg *et al.*, 2021). SDT outlines intrinsic and extrinsic motivations and helps establishing the links between motivations and behaviors when dealing with individual needs, the environment protection and well-being (Gilal *et al.*, 2019).

The consumption of environmentally friendly products and products that take into consideration animal welfare show the importance and willingness of vegans and non-vegans to purchase vegan products (Ghvanidze *et al.*, 2016; Maeda- Yamamoto, 2017; Laureti & Benedetti, 2018). Vegan and vegetarian diets are growing in popularity in many countries (Janssen *et al.*, 2016). The responsibility regarding the environment and animals is felt by a growing number of consumers and therefore they express their concerns and ideals by purchasing environmentally and animal friendly products (Carrington *et al.*, 2014; Hsu & Chen, 2014; Ghvanidze *et al.*, 2016). In general, consumers, vegan and non-vegans, are disposed to purchase products that care for the environment and animals (Ghvanidze *et al.*, 2016; Laureti & Benedetti, 2018). Despite the growing interest in veganism and in vegan products, there is a shortage of investigation on this field, linking veganism and consumption. Therefore, few studies investigate the vegan consumer behavior as well as consumers of vegan products in general.

7.2.2. Involvement with vegan products

Involvement with a product happens when there is a connection with it (Richins & Bloch, 1986). Involvement with a product is emotional and impacts consumers' responsiveness towards it (Celsi & Olson, 1988; Tarkiainen & Sundqvist, 2009; Baldini & Ponchio, 2018). This involvement with a product makes the individual act, usually purchasing it, repurchasing it, talking about it to others, and recommending it (Tarkiainen & Sundqvist, 2009). Involvement goes from high to low and is linked to purchasing purpose (Park & Keil, 2019). High involvement encompasses more effort and assessment (Kim, *et al.*, 2019; Rokonuzzaman, *et al.*, 2020) and low involvement occurs when there is no need to do any research (Jeseviciute-Ufartiene, 2019). High involvement happens when there are health issues, values and desires (Strubel & Petrie, 2016), or the wish to buy quality goods (Rokonuzzaman *et al.*, 2020).

When there is personal involvement, acceptance of products and services occurs (Ares *et al.*, 2010), and might end in purchase (Kim *et al.*, 2010; Montandon, *et al.* 2017). Involvement is influenced by personality, data, familiarity (Hoyer & MacInnis, 2001) and makes individuals examine the product (Baldini & Ponchio, 2018), creating a connection (Caro, *et al.*, 2011)

7.2.3. Drivers of involvement with vegan products

7.2.3.1. Animal Welfare

By purchasing food of animal origin, individuals are more and more concerned about animal welfare (EU Platform on Animal Welfare, 2019). According to the *Attitudes of Europeans towards Animal Welfare Report*, animal welfare “refers to the duty to respect all animals” (European Commission, 2016, p. 6). Animal welfare involves the physical state of animals, but also the psychological state and feelings (Duncan, 2010). In 1965, World Organization for Animal Health, developed the ‘Five Freedoms’ in order to guide individuals that take care of animals: (1) freedom from hunger, malnutrition and thirst; (2) freedom from fear and distress; (3) freedom from heat stress or physical discomfort; (4) freedom from pain, injury and disease; and (5) freedom to express normal patterns of behavior (OIE, 1965).

Animal welfare has been cited as a significant reason for consumers to purchase organic animal products (Padilla Bravo *et al.*, 2013; Zanolini *et al.*, 2013) or even become vegan (Janssen *et al.*, 2016; Kerschke-Risch, 2015; Radnitz *et al.*, 2015; Wrenn, 2017; Kalte, 2020). Clark *et al.* (2016) mention that individuals project human standards regarding well-being and happiness into animals. Francione and Charlton (2015) mention that the vegan diet avoids unnecessary suffering on animals, and Kazez (2017) adds that, since nutritional factors are not lost by becoming vegan, the necessity to kill animals for food can be avoided.

Individuals defending animal welfare, environment and humankind are more willing to choose a vegan lifestyle (Andersen & Tobiasen, 2004; Stolle & Micheletti, 2013; Van Deth, 2014). At the same time, animal welfare also expresses moral, political, social, or ecological practices (Kalte, 2020) and according to Novoselova *et al.* (2005) has a positive outcome on

consumer food choices. Animal welfare is present in companies, consumers, and politicians (Hewson, 2003) as individuals view animals as having feelings and rights (Greenebaum, 2015). Animal welfare represents not only the concern for animal health but also the way they live (Zapf *et al.*, 2015). Well-fare of animals is the main reason to become vegan (Dyett *et al.*, 2013; Janssen *et al.*, 2016), influencing lifestyle, involvement, and attitudes towards vegan products (Janssen *et al.*, 2016; Cooper, 2018). Therefore, the following hypothesis is proposed:

Hypothesis 1 – Animal welfare influences involvement with vegan products

7.2.3.2. Ecological motivation

Weather alterations and conservational questions influence lifespan and individuals are now conscious regarding these matters and how changing behavior leads to a green standard of living. Ecological motivations are connected to conservational and animal worries (Campbell & Smith, 2006) also to sustainable expansion and conservational responsibilities (Faria *et al.*, 2016). Ecological motivations are about environmental rights and concerns about animals. Decisions made by vegans are influenced by their ecological motivations, since vegan products are associated to sustainable products (Radnitz *et al.*, 2015). Ecologically inspired persons make choices that protect environment and respect animal life (Harper & Makatouni, 2002). Ecological motivations are important in order to keep a viable ecological lifestyle (Şimşekoğlu, *et al.*, 2015).

Extremely ecologically driven people buy eco-friendly goods (Wang *et al.*, 2014) and might follow a greener diet (Rothgerber, 2013; Radnitz *et al.*, 2015; Janssen *et al.*, 2016). Therefore, buying eco-friendly, being vegetarian or vegan, can be related to ecological motivations (Majláth, 2008; Franzen & Mayer, 2010), also to a higher environmentally sense of responsibility (Dagher & Itani, 2014). Ecological motivations impact attitude concerning the consumption of vegan products, because green products are ecological merchandises (Tobler *et al.*, 2011; Rothgerber, 2013; Radnitz *et al.*, 2015).

Green consumption, animal well-being, ecological matters, health apprehensions, are part of a lifestyle that is the foundation of veganism (Greenebaum, 2012; Clark *et al.*, 2019).

Thus, it is extremely important to study this relationship between ecological motivations and willingness to be vegan in order to understand what influences somebody to become vegan (Cova, 1997; Jabar, 2003; Charrad, 2011). Therefore, the link between ecological motivations and involvement with vegan products is strengthening even amongst non-vegan individuals (Şimşekoğlu *et al.*, 2015). Consequently, the following hypothesis is proposed:

Hypothesis 2 – Ecological motivation influences involvement with vegan products

7.2.3.3. Environmental Concerns

Environmental concerns can be seen as the knowledge of environmental matters (Cruz, 2017), also the consciousness about what harms the environment and what can be done to protect it (Chan & Lau, 2004). Environmental concerns are a responsive approach concerning environmental matters (Takács-Sánta, 2007). So, environmental concern can be defined as a socially-conscious behavior, adopted in relation to the environment, taking into account how this behavior affects the environment (Shannon & Manata, 2020).

Individuals can be categorized, according to Dietz *et al.* (2005), into three kinds: (1) egoistically, regarding the individual, family and friends; (2) socially or humanistic altruism, that will include the community; and (3) lastly, the biospheric altruism category, which includes concerns towards animals and ecology, where the importance of nature and the need to preserve is the main feature (Dietz *et al.*, 2005). Environmental concerns are essential in buyers who live accordingly to an eco-friendly conduct (Bamberg, 2003) and influence consumers to purchase green goods and therefore protect the environment (Greaves *et al.*, 2013). The more ecologically worried, the eco-friendlier products are bought (Pollard *et al.*, 1999). When buying eco-friendly, consciousness towards the environment is strengthened (Arisal & Atalar, 2016).

Environmental concerns influence individuals to embrace a vegan lifestyle (Rothgerber, 2013). Vegans recognize their duty and need to protect the planet (Ciocchetti, 2012; Wills, 2016). So, in order to protect the environment, individuals look for products that fulfill their motivations and tend to be more involved with them (Cherry, 2015). Environmental concerns lead individuals to be more involved with vegan products (Ruane & Wallace,

2015) and live in an eco-friendly way (Wang *et al.*, 2017). Consequently, we propose the following hypothesis

Hypothesis 3 – Environmental concerns influences involvement with vegan products

7.2.3.4. Idealism

Idealism can explain behavioral trends (Lai & Thornton, 2015). Beliefs and values are important gears of idealism (Thornton, 2005) and avoiding harm is a key aspect for idealistic individuals (Cooper, 2018). Idealistic individuals believe that righteousness, integrity, dignity should be qualities to uphold (Guyer & Horstmann, 2019). Idealism highpoints the mind, the intellectual, the best (Sarnowski, 2018), and is a mental symbol where ideologies and morals are the individual's sense of true self (Kivetz *et al.*, 2007). Idealistic individuals pursue what should be, the ideal, even when it seems difficult to achieve (Sarnowski, 2018). The idealistic individual seeks human and animal rights, environmental protection (Sarnowski, 2018).

Ethical values are motivated by the necessity of doing the correct thing and satisfying therefore the individual's ethical standards (Forsyth *et al.*, 2008). Attitude, value, and behavior are crucial in order to understand motivation (Scholl, 2016), and therefore important to understand individual's idealism. Attitudes regarding things, other individuals or even surroundings are changeable; values, on the other hand are unchangeable because they are inked to ideas and situations, deeply rooted inside the individual's belief system. An ethical conduct incorporates values (Scholl, 2016).

Individuals act accordingly to their ethical values, what is part of their belief system and can therefore be right or wrong. Whereas vegans want to act accordingly to the wish not to hurt any living being (Marta *et al.* 2003). Vegans act accordingly to the principle that caring for the environment, animals, and others is the only lifestyle to be followed (Kalte, 2020). Committed people, idealistic individuals, are certain that not damaging the world is the right thing to do, not just because of their ethical values, but because wanting a healthy world is the correct action to take (Guyer & Horstmann, 2019; Kalte, 2020). Contrarily, less

idealistic individuals disbelieve in that the goodness prevails, and therefore in some occasions bad things happen (Guyer & Horstmann, 2019).

Vegans have higher ethical values and are highly dedicated to their cause: protect animals, environment and live by not destroying the planet at all (Kalte, 2020). Vegans trust that, the generosity is going to succeed (Guyer & Horstmann, 2018) and influence the attitudes and actions of others (Fortysh, 1992) and stop the intake and usage of any animal products (Tobler *et al.*, 2011). Being idealistic and believing in animal rights leads people to adopt veganism and be involved with vegan products (Guyer & Horstmann, 2019). Therefore, the following hypothesis is proposed:

Hypothesis 4 – Idealism influences involvement with vegan products

7.2.3.5. Social Influence

The concept of social influence is part of individuals, which urge the need to be part of a group, where all think and behave alike (Das, *et al.*, 2017; Clark, *et al.*, 2019). Social influence might outline individual's attitudes, principles, activities, behaviors and is the degree of the individual's involvement in decision-making (Lui *et al.*, 2020). Social influence can decline when and if experience grows (Wang *et al.*, 2013; Goes *et al.*, 2014), and is influenced through different processes, such as agreement and empathy (Zhao *et al.*, 2018). According to Zhao *et al.* (2018), it is originated from somebody well known like managers, coworkers, and/or family and friends.

Lifestyle, opinions, feelings may impact individuals socially, and therefore behaviors change (Markowski & Roxburgh, 2019; Wescombe, 2019), so individuals can be influenced over assessments and attitudes, leading into changes of choices and attitudes (Friedkin, 2006; Cunningham, *et al.*, 2012). Social influence combines countless ways individuals can be influenced (Crano, 2000), impacting directly and indirectly approaches, opinions, and attitudes (Venkatesh *et al.*, 2003). Understanding social influence helps the comprehension of social behavior, assisting in the decision making, public opinion, and leading to changes (Peng *et al.*, 2017).

Social influence alters food adoptions and ingesting (Pedersen *et al.*, 2015; Polivy & Pliner, 2015), and can remove undesirable conducts leading to constructive guidelines (Cialdini & Trost, 1998). Concerning veganism, people see vegans as individuals that are ethical and virtuous, and lead others to seek the same lifestyle (Gavelle, *et al.*, 2019; Rosenfeld & Reysen, 2019; Wescombe, 2019). So, according to Canavari and Olson (2007), social influence changes consumers' choices and actions. The pressure of the social context and the influence of the peers are, therefore, strong reasons to get more involved with vegan products (Varshneya, Pandey & Das, 2017; Maleka *et al.*, 2019).

Therefore, the following hypothesis is presented:

Hypothesis 5 – Social influence impacts involvement with vegan products

7.3. Understanding the consequences of involvement with vegan products

7.3.1. Eudemonic and Hedonic happiness

Aristotle's philosophy of happiness is the basis to eudemonic tradition in well-being. Well-being experiences are molded by the individual's personal objectives and reasons (Sheldon & Kasser, 1995). In traditional and actual interpretations of hedonic and eudemonic well-being, are sometimes seen as opposing perspectives. Hedonism is the well-being based on the pleasure of mind and body, and happiness (Kahneman *et al.*, 1999). As for eudaimonism, well-being is more than happiness, it is the fulfillment of the individual's true nature and potentials (Waterman, 1993). However hedonic and eudemonic well-being are linked, since to be able to reach one's true nature is a pleasure itself (Waterman, 1993). Happiness is achieved by "the striving for perfection that represents the realization of one's true potential" (Ryff 1995, p. 100).

The hedonic and eudemonic adaptation theory outlines well-being but also happiness and the mind-set. While eudemonic conceptions are related to living well, hedonic conceptions rely on the lack of pain and existence of pleasure or positive situations (Ryan *et al.*, 2008). According to Ryan *et al.* (2008) pleasure or positive situations are results of living well, also

a life of dignity and above all meaningful, features of Eudaimonia. Although the hedonic view comprises life goals and lifestyles, these lifestyles can be opposing to the features of eudaimonia, when reaching pleasure is done through low morals and greediness (Ryan and Deci, 2001). Hedonic well-being can be felt by treating our body and eudaemonic well-being by treating our mind (Hall *et al.*, 2011). SDT provides a better understanding of the linkages showing the purpose and the why, i.e., what is the goal, what motivates the individual and why is the individual doing it. Recent studies have shown that purchasing/ owning improves life satisfaction (Markus & Schwartz, 2010), but the more the products are related to the individual the more satisfied he becomes (Khan, Ghani & Aziz, 2019).

Happiness is accomplished when one's true nature and beliefs are empowered. By living the life-style, chosen by an individual, striving to live according to a philosophy, results in happiness and well-being (Waterman, 1993). Veganism involves not consuming and using any animal products (Harmon, 2020). Vegans' lifestyle is led by health and environmental causes, by excluding animal cruelty and exploitation, following an ethical movement in order to protect the planet. Vegans chose eco-friendly and healthy products so that their body is nourished accurately, leading to a healthy lifestyle but also a personal commitment to their standards (Lyubomirsky, 2011). Consequently, the involvement with vegan products is vital, as this involvement will affect the enjoyment of being vegan, of doing the right thing. The personal fulfilment, the pleasure and happiness that the use of vegan products that follow their philosophy brings, requires true involvement, since there are products that are not produced following the strict guidelines of veganism. Vegan individuals buy products that are made according to their lifestyle (Rahman, 2018) and their involvement is shaped by values and benefits that increases their well-being and happiness (Rahman, 2018; Ghali, 2019).

Therefore, the following hypotheses are presented:

Hypothesis 6: Involvement with vegan products impacts eudaemonic happiness

Hypothesis 7: Involvement with vegan products impacts hedonic happiness

7.3.2. Purchase Intention

Purchase Intention is the motivation to buy a product or service (Dodds *et al.*, 1991), and happens when the product or service has characteristics that fulfil the consumers' needs (Fournier, 1998). When there is a plan of acquiring something, there is purchase intention (Fischbein & Ajzen, 1975; Wu *et al.*, 2011), and the stronger the motivation the bigger a possible purchase (Mello & Sauerbronn, 2014; Martins, Costa, Oliveira, Gonçalves & Branco, 2019). Purchase intention is activated by attitudes, feelings, sensations, wishes, and needs (Luo *et al.*, 2011; Gogoi, 2013).

Highly environmentally focused individuals have the intention to buy eco-friendly products (Mueller Loose & Grunert, 2015; Loebnitz & Grunert, 2018) since their consumer choices impact the environment (Hsu *et al.*, 2017; Yadav & Pathak, 2017). Having sustainable motives and trust have a substantial influence on purchase intention (Garg *et al.*, 2021). Thus, involvement with vegan products impacts purchase intention. As involvement occurs usually when there is a need or wish to be fulfilled and attitude and involvement lead to purchase and leading therefore to happiness (Rex & Baumann, 2007; Ghali, 2019).

Hypothesis 8: Involvement with vegan products impacts Purchase Intention

7.3.3. Price Sensitivity

Price sensitivity can be defined as a feeling that the consumer has when paying the price of an offer (Ramirez & Goldsmith, 2009). Price impacts purchasers' assessment of products and the ultimate buying decision (de Medeiros *et al.*, 2016; Li *et al.*, 2016; Moser, 2016). The price is the cost of a service/product, or the sum of values paid by consumers of a given product/service (Kotler *et al.*, 2005). There are individuals that, regardless of their income, refuse to spend money if the purchase may be an unfair exchange. When individuals realizing that the value of a product is not worth the purchased, they can decide not to buy it (Dalli *et al.*, 2006). The Marketing Mix can influence consumers regarding how much they are willing to pay for a specific product/service but also product availability, advertising, delivery time (Goldsmith *et al.*, 2016). Price sensitivity foresees product evaluations (Insch

& McBride, 2004; Manrai *et al.*, 1998) and purchasing (Awada & Yiannaka, 2012; Godey *et al.*, 2012).

The individual that searches for relevant information regarding a specific product generates involvement (Richins & Bloch, 1986; Baldini & Ponchio, 2018). Vegan and non-vegan consumers are concerned with product's quality, but also with the environmental consequences that are associated with their purchase decision. Prices can be higher in these types of products, but concerned consumers are willing to pay more (Radman, 2005). This study intends understand the impact of involvement with vegan products on price sensitivity. So, the following hypothesis is presented:

Hypothesis 9: Involvement with vegan products impacts Price sensitivity

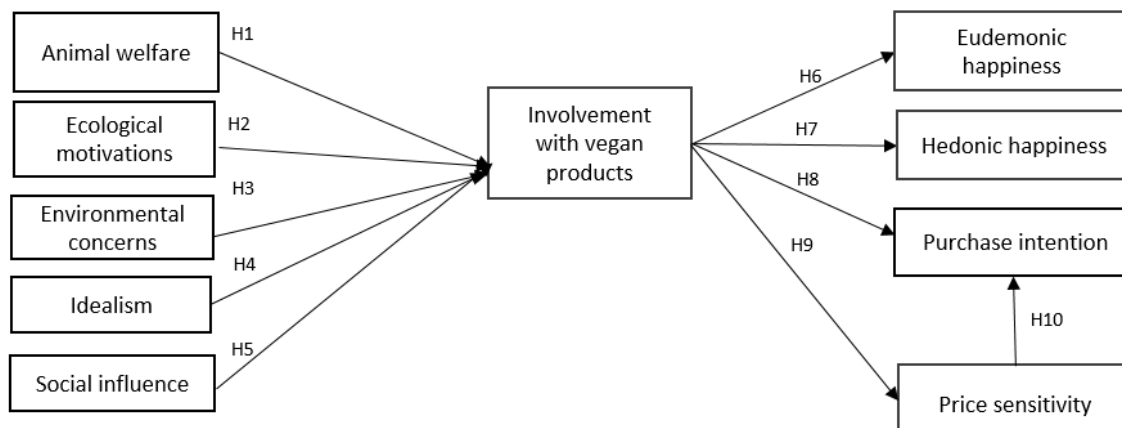
Vegans have limited options regarding their diet and other consumptions, such as clothes or beauty products, in a prevailing animal intake culture (Jabs *et al.*, 2000). Thus, it can be assumed that consumers of vegan products, are willing to pay more to purchase products that are non-animal products and that are not tested on animals (Radman, 2005). Consequently, the price individuals are willing to pay, influences purchase intention regarding green and vegan products, as people may express their concern for the environment through their purchases and consumption (Chen, 2008). Therefore, the following hypothesis is presented:

Hypothesis 10: Price sensitivity impacts purchase intention of vegan products

7.4. Method

The conceptual investigation model and the proposed relationships between the considered variables are presented in figure 4.

Figure 4
Conceptual Model



7.5. Sample and Data Collection

7.5.1. Sampling

This research is based on a cross sectional data collection that used a structured questionnaire to collect two samples of 580 vegans and 517 non-vegans. The questionnaire was shared on Facebook, among four vegan groups, with a total of 284.900 members. Most of the respondents are female, ages are between 18 and 33, having a university degree, mostly employed and student-workers, and with an over 500 Euros.

Table 23

Demographic profile of the respondents

Category	Vegans (580)	Non-vegans (517)
Male	170	165
Female	410	352
Age		
10-17	18	15
18 - 25	218	165
26 - 33	190	162
34 – 41	90	97
Over 41	64	78
Educational background		
Until 12 th grade	201	136
Higher education	379	381
Occupation		

Student/Student worker	158	194
Employed	282	287
others	68	36
Household members		
1 -2	279	217
Over 3	301	300
Income		
Less than 500€	77	107
501€-1499€	278	184
Over 1500€	225	226

7.5.2. Measures

The questionnaire is based on tested scales, translated, and adapted from past relevant literature (Ryan & Deci, 2001; Van Boven & Gilovich, 2003). All the items were measured on a seven-point Likert scale (1 =strongly disagree to 7 =strongly agree). Metrics can be found on table 24, identifying the origin of the metric and the standardized regression weights.

Table 24
Results of confirmatory factor analysis

Construct	Metrics	VEGAN		NON-VEGAN	
		SRW	CR	SRW	CR
Animal welfare (AW)	1. Animals must be kept in their natural habitat.	0.717		0.611	
Adapted from (Graaf, <i>et al.</i> , 2016)	2. It is important that animals can behave naturally.	0.908	25.141	0.77	18.676
	3. I care about the welfare of animals.	0.884	20.089	0.741	13.334
	4. Animals must not suffer.	0.901	20.476	0.818	14.3
	5. The idea of a "natural environment" applies to both domestic and wild animals.	0.651	15.094	0.714	13.104
	6. Companies must think about their profits, but also about animals.	0.783	18.103	0.814	14.315
	7. Companies must think about animals as well as their market value and costs.	0.702	16.252	0.761	13.693
Ecological motivations (EM)	1. It is very important that production of vegan products respect animal rights.	0.835		0.779	
Adapted from (Yadav & Pathak, 2016)	2. It is very important that vegan products have been prepared in an ecological environment.	0.906	28.789	0.924	23.076
	3. It is very important that vegan products are packaged ecologically.	0.930	30.163	0.868	21.495
	4. It is very important that vegan products have been produced in a way that does not unbalance nature.	0.935	30.438	0.871	21.601
Environmental concerns (EC)	1. The balance of nature is very delicate and can be easily changed.	0.749		0.848	
Adapted from (Yadav & Pathak, 2016)	2. Human beings, when they interfere with nature, often cause disastrous consequences.	0.85	21.116	0.923	29.391
	3. Human beings must live in harmony with nature to survive.	0.858	21.346	0.926	29.527

	4. Humanity is abusing the environment.	0.885	22.056	0.926	29.581
	5. Humanity was not created to dominate the rest of nature.	0.809	19.981	0.86	25.662
Idealism (ID)	1. I respect the principles and universal values when doing judgments.	0.782		0.785	
Adapted from (Leonidou, Leonidou & Kvasova, 2013)	2. There are universal principles or ethical rules that can be applied to most parts of situations.	0.882	20.433	0.872	21.245
	3. Regardless of circumstances, there are principles and overlapping rules.	0.667	15.916	0.844	20.515
	4. We must prevent others from taking risks.	0.691	16.564	0.79	18.975
Social Influence (SI)	1. My friends often recommend vegan products to me.	0.931		0.938	
Adapted from (Varshneya, Pandey & Das,2017)	2. My friends usually go shopping for vegan products with me.	0.727	18.373	0.939	41.62
	3. My friends often share their experiences and knowledge about vegan products with me.	0.865	20.78	0.952	43.589
Involvement with vegan products (INV)	1. Vegan products are important to me.	0.931		0.978	
Adapted from (Teng & Lu, 2016)	2. Vegan products remain interesting to me.	0.9	34.378	0.977	71.68
	3. I am concerned about animal issues.	0.764	24.338	0.928	49.071
	4. I am very involved in finding and reading information about vegan products.	0.63	17.771	0.882	39.000
Eudaemonic Happiness (EUD)	1. Veganism helped me become self-determining and independent.	0.864		0.817	
Adapted from (Ryan & Deci 2001)	2. Veganism helped me have warm, satisfying, and trusting relationships with others.	0.976	38.322	0.846	44.965
	3. Veganism helped me possess a positive attitude toward myself.	0.848	27.965	0.822	22.927
	4. Veganism helped me feel there is meaning to present and past life.	0.857	28.54	0.997	32.071
	5. Veganism helped me develop a lot as a person.	0.849	27.871	0.996	29.569
	6. Veganism helped me have a sense of mastery and competence in managing the environment.	0.992	39.75	0.994	31.932
Hedonic happiness (HED)	1. Veganism increased my overall life satisfaction.	0.905		0.919	
Adapted from (Van Boven & Gilovich, 2003)	2. Veganism contributed to my overall happiness.	0.965	40.495	0.951	38.796
	3. Veganism has improved my overall well-being.	0.908	35.276	0.901	33.712
Purchase intention (PI)	1. I am happy to buy vegan products.	0.846		0.847	
Adapted from (Teng & Lu, 2016)	2. I hope to consume vegan products.	0.833	24.078	0.924	29.262
	3. I would buy vegan products.	0.795	22.493	0.93	29.667
	4. I plan to consume vegan products.	0.808	19.705	0.951	26.404
	5. I intend to buy vegan products in the next few days.	0.667	17.684	0.789	22.213
Price sensitivity (PS)	1. I am willing to buy vegan products even if I think they will have a high cost.	0.798		0.822	
Adapted from (Ramirez & Goldsmith, 2009)	2. It is worth spending money on buying vegan products.	0.819	19.305	0.835	20.251
	3. I don't mind spending money to buy vegan products.	0.809	19.164	0.83	20.138

Abbreviation: CR, critical ratio; SRW, standardized regression weights.

A confirmatory factor analysis was performed, using AMOS 25, to measure scales' psychometric properties and measurement model fit. The model shows a good fit for vegan (IFI=0.958; TLI=0.954; CFI=0.958; RMSEA=0.042; $\chi^2/df=2.039$) and non-vegans (IFI=0.967; TLI=0.965; CFI=0.967; RMSEA=0.043; $\chi^2/df=1.933$). Composite reliability (CR) and the

average variance extracted (AVE) were computed. All scales presented values above 0.7 on CR and above 0.5 on AVE, as recommended (Hair *et al.*, 2010). Discriminant validity is supported by the fact that all correlations between the constructs are smaller than 1 and the squared correlations calculated for each pair of constructs is always smaller than the variance extracted for the corresponding constructs (Shiu *et al.*, 2011), thus confirming the discriminant validity (Table 25 and 26).

Table 25

Square Correlations, Cronbach's Alpha composite reliabilities, and average variances extracted - vegans

Constructs	SD	AW	EM	EC	ID	SI	INV	EUD	HED	PI	PS	AVE	CR
AW	0.382	0.919										0.637	0.924
EM	0.531	0.13	0.943									0.814	0.946
EC	0.390	0.239	0.138	0.913								0.691	0.918
ID	1.009	0.148	0.25	0.248	0.837							0.578	0.844
SI	1.708	0.026	-0.068	0.17	0.051	0.852						0.662	0.854
INV	0.725	0.194	0.087	0.246	0.175	0.097	0.872					0.664	0.886
EUD	1.401	0.139	0.154	0.169	0.199	0.041	0.201	0.97				0.81	0.962
HED	1.005	0.138	0.06	0.164	0.175	0.275	0.384	0.22	0.947			0.858	0.948
PI	0.647	0.221	0.098	0.237	0.185	0.094	0.716	0.163	0.396	0.873		0.628	0.893
PS	1.105	0.201	0.213	0.185	0.255	0.161	0.333	0.133	0.247	0.374	0.839	0.654	0.85

Note: SD- Standard Deviation; Diagonal in bold - Cronbach's Alpha; CR - Composite Reliability; AVE – Average Variance Extracted.

Table 26

Square Correlations, Cronbach's Alpha composite reliabilities, and average variances extracted – non-vegans

Constructs	SD	AW	EM	EC	ID	SI	INV	EUD	HED	PI	PS	AVE	CR
AW	0.436	0.899										0.562	0.899
EM	0.378	0.477	0.923									0.743	0.92
EC	0.463	0.403	0.536	0.953								0.805	0.954
ID	0.916	0.326	0.3	0.429	0.892							0.678	0.894
SI	1.807	0.101	0.078	0.078	0.11	0.96						0.889	0.96
INV	1.001	0.453	0.399	0.371	0.276	0.142	0.969					0.888	0.969
EUD	1.529	0.192	0.152	0.103	0.19	0.073	0.413	0.971				0.839	0.969
HED	1.517	0.324	0.19	0.167	0.179	0.312	0.599	0.466	0.945			0.854	0.949
PI	1.008	0.497	0.451	0.41	0.248	0.141	0.719	0.411	0.596	0.942		0.793	0.95
PS	1.179	0.381	0.235	0.3	0.269	0.234	0.467	0.27	0.359	0.491	0.862	0.687	0.868

Note: SD- Standard Deviation; Diagonal in bold - Cronbach's Alpha; CR - Composite Reliability; AVE – Average Variance Extracted.

7.5.3. Common Method Bias

A Harman's single factor test and a common latent factor analysis were performed to identify the common variance (Podsakoff *et al.*, 2003). The Harman's test, performed in SPSS 25.0, showed that any factor could explain for vegans more than 12.011 % and for non-vegans more than 17.366%, of the variance and there were 10 factors with eigenvalues greater than one explaining for vegans 77.788% of the variance, and 9 factors with eigenvalues-greater-than-one explaining for non-vegans 80.658% of the total variance (Norman, 1988). In addition, a confirmatory factor analysis was performed limiting all items of the model to load on a common single factor (Podsakoff *et al.*, 2003). The resulting fit indices show the model did not provide an acceptable fit (vegans - $\chi^2/df = 16.523$; incremental fit index = 0.354; Tucker–Lewis index =0.315; comparative fit index 0.352; Root Mean Square Error of Approximation = 0.164; non-vegans - $\chi^2/df = 15.700$; incremental fit index = 0.474; Tucker–Lewis index =0.441; comparative fit index 0.473; Root Mean Square Error of Approximation = 0.169), so the common method bias does not seem to be a problem.

7.6. Findings and Discussion

The final model shows a good fit for vegans (IFI=0.958; TLI=0.954; CFI=0.958; RMSEA=0.042; $\chi^2/df=2.039$) and non-vegans (IFI=0.967; TLI=0.965; CFI=0.967; RMSEA=0.043; $\chi^2/df=1.933$). A multi-group analysis was done to test the effects of involvement with vegan products, considering two groups: vegans and non-vegans with a total of 1097 respondents; vegan group with 580 respondents and the non-vegan group with 517 respondents. Metric invariance was tested and a CFI differences below 0.01 were found in both models, supporting the expected metric invariance (Cheung & Rensvold, 2002).

Table 27
Results

	Vegan (n=580)		Non-vegan (n=517)	
	srw	p	srw	p
H1: Animal Welfare → Involvement	0.145	0.001	0.299	***
H2: Ecological motivations → Involvement	0.028	0.519	0.165	0.002
H3: Environmental concerns → Involvement	0.178	***	0.131	0.01
H4: Idealism → Involvement	0.113	0.017	0.066	0.153
H5: Social influence → Involvement	0.071	0.115	0.088	0.025
H6: Involvement → Eudaemonic Happiness	0.344	***	0.420	***
H7: Involvement → Hedonic happiness	0.787	***	0.607	***
H8: Involvement → Purchase intention	0.211	***	0.472	***
H9: Involvement → Price sensitivity	0.403	***	0.787	***
H10: Price sensitivity → Purchase intention	0.103	0.002	0.119	***

Notes: two-tailed test: ***p < 0.001; **p < 0.01; *p < 0.05; n.s - not significant (p > 0.05);

Results on table 27 show that animal welfare and environmental concerns have a significant influence on the involvement with vegan products, therefore supporting H1 (vegans - R=0.145; P=0.001; non-vegans R=0.299; P=***) and H3 (vegans - R=0.178; P=***; non-vegans R=0.131; P=0.01) in both samples (Janssen *et al.*, 2016; Kerschke-Risch, 2015; Radnitz *et al.*, 2015; Wrenn, 2017). SDT clarified the linkage between individual motivations and the tendency to get involved (Deci & Ryan, 2000). Therefore, since the main reasons to consume vegan products are related to environment and animal protection, the involvement with these products shows evidence of personal responsibility and fulfillment and consequently well-being and happiness (Carlsson-Kanyama & González, 2009; Garg *et al.*, 2021). According to the results, the effects of idealism are mixed, being H4 supported within the vegan group (R=0.113; P=0.017) but not in the non-vegan group (R=0.066; P=0.153). Veganism is mainly an ideology, a lifestyle, a way of living and vegans are highly motivated individuals and tend to act according to their motivations. On the contrary,

among the non-vegan group, the reasons to get closed to or to purchase vegan products may be sporadic, based on dietetic reasons or social motivations (Kalte, 2020). Ecological motivations (H2) (vegans $R=0.028$; $P=0.519$; non-vegans $R=0.165$; $P=0.002$) and social influence H5 (vegan - $R=0.071$; $P=0.115$; non-vegan - $R=0.088$; $P=0.025$) only have influence on the non-vegan group. In fact, the motivations for the vegan group are fundamentally reasons related to animal well-being, environmental issues and idealism because we are talking about a lifestyle based on values (Kalte, 2020). On the other hand, non-vegans begin to reveal a growing involvement with vegan products mainly because of the daily ecological and environmental pressure that are felt (Janssen *et al.*, 2016). For non-vegans there are also social reasons influencing their attitudes, because socially it starts to be highly regarded to have a greater environmental awareness, through the acquisition of vegan products (Guyer *et al.*, 2018).

Additionally, involvement with vegan products impacts eudaemonic happiness and hedonic happiness, therefore supporting H6 and H7 in both samples (H6: vegans $R=0.211$; $P=***$; non-vegans $R=0.472$; $P=***$; H7: vegans - $R=0.403$; $P=***$; non-vegans $R=0.787$; $P=***$). Involvement leads to greater happiness among vegans because for them it is a matter of lifestyle, they feel good and happy to adopt a life with these characteristics and therefore the impact is greater (Harmon, 2020). SDT helps to understand these results once individuals feel autonomous to take their own decisions, knowing their impact on their environment and feeling happy with it (Garg *et al.*, 2021). At the same time, non-vegans feel happy to follow a heavily stressed issue in their daily lives, based on some kind of pressure (Gilal *et al.*, 2019). Results show that H8 (vegans - $R=0.787$; $P=***$; non-vegans $R=0.607$; $P=***$), H9 (vegans - $R=0.403$; $P=***$; non-vegans $R=0.787$; $P=***$), showing the influence of involvement on purchase intention and price sensitivity. Price sensitivity, as well, as an influence on purchase intention according to H10 (vegans - $R=0.103$; $P=0.002$; non-vegans $R=0.119$; $P=***$). These results are valid in both samples, but the results are stronger among non-vegan individuals. Apparently, as veganism is vegan's lifestyle, their involvement with vegan products tend to be higher but they gained a current status in their daily lives (Garg *et al.*, 2021) so there is no space to pay higher prices or a special decision process when buying them: they became current and basic (Mueller Loose & Grunert, 2015; Loebnitz & Grunert, 2018). On the contrary, non-vegans may be willing to pay more

and show less price sensitivity because these shopping decisions are not routine, they are not current, they are a special issue and more involvement leads to the willingness to buy more and to pay more (Goldsmith *et al.*, 1995; Radman, 2005; Baldini & Ponchio, 2018). Nowadays food choices where animal products are abolished defy the dietary ideologies in a mainly meat-eating culture (Jabs *et al.*, 2000). Choosing a food-intake lifestyle in a world where it is common to eat meat can be a challenge also regarding the purchase of adequate products (Beardsworth & Keil, 1992). Already in 2010, Pluhar mentioned that food was considered as a political topic, regarding animal cruelty and environmental destruction, so it seems that not only vegans and vegetarians have ecological motivations to avoid meat intake (Jabs *et al.*, 2000). While some individual only follow a vegan diet in order not to harm living beings (MacNair, 1998), some individuals choose eco-friendly and local products that follow rules to protect the environment (Roosevelt, 2006). Our results, based on SDT, show how the perception of control give individuals special motivations to live and consume in a different way, protecting animals and environment (Gilal *et al.*, 2019; Garg *et al.*, 2021), to adopt new social standards (Jabs *et al.*, 2000) and increase their well-being (Gilal *et al.*, 2019) changing their consumptions or even their lifestyles.

7.7. Contributions and Limitations

7.7.1. Theoretical Contributions

Literature shows that there is little research regarding involvement with vegan products and the motivations to adopt a vegan lifestyle (Earle & Hodson, 2017; Bagci & Olgun, 2019). At the same time, the involvement with a vegan diet and with vegan products reveals lack of investigation as well (Earle *et al.*, 2019). Investigation on veganism remain largely connected to the diet, and other motivations like social influence or ideology remain largely uninvestigated (Greenebaum, 2018). Therefore, our investigation presents four major contributions:

- 1) Firstly, comparing ideology and individual features as antecedents of the involvement with vegan products, providing the basis for further investigations on the drivers and motivations of veganism;
- 2) The second contribution concerns the impacts on well-being. The investigation on a lifestyle or, at least, a consumption that provides happiness and well-being, will bring a better comprehension on the future of veganism and on the growth of this market;
- 3) The third contribution is related to impacts on price sensitivity, showing that prices are less relevant and that customers are willing to pay more for vegan products;
- 4) The fourth compares vegans and non-vegans concerning the involvement with vegan products, showing how social issues may lead to a greater involvement with vegan products, that non vegans may buy less currently, but willing to pay even more.

Earlier studies have presented that individuals are steered by ethical values when it comes to food intake (De Backer *et al.*, 2015; Ruby *et al.*, 2013). However, veganism is not only restricted to vegans, but also individuals that consider themselves as non-vegans chose to partially follow this lifestyle as for the rising social movement concerning animal welfare, animal rights, animal cruelty and environment protection (Greenebaum, 2012; Rosenfeld & Burrow, 2017; Rosenfeld, 2018). This study gives additional support to past literature and advances knowledge, showing that vegan products are not only consumed by vegans, but also non-vegans they might behave differently, contributing for the rise of a potentially huge and profitable market. The SDT outlines intrinsic and extrinsic motivation in order to explain that behavior is molded by the satisfaction of getting what is wanted (Gilal *et al.*, 2019). Vegans and non-vegans consume products they relate with themselves (Khan, Ghani, & Aziz, 2019), having a positive impact on individual wellbeing and on the overall environment. Therefore, individuals that are involved with vegan products and consequently, the satisfaction felt by the fulfilment of their needs (Gagne & Deci, 2005), tend to experience a sense of achievement, fulfillment and well-being (Ryan, Sheldon, Kasser, & Deci, 1996).

7.7.2. Practical Contributions

Apart from the academic contributions, this investigation shows that vegan products are not only consumed by vegans, but most of the society might be pushed in the sense of a greater involvement and consumption of vegan products. Although vegan values are related to restricting meat intake, in order to protect animals and the environment, our study shows that also non-vegans tend to choose vegan and eco-friendly products in order to defend the planet and avoid animal harm. Vegan lifestyle and philosophy have been rising since awareness towards consequences of consumer behavior are now more visible (Kalte, 2020). The negative outcomes that eating animals and damaging the environment have on the planet and society are more recognized (Van Deth, 2014; Kalte, 2020). Identifying and supporting the value of vegan lifestyle will allow a better understanding of the importance of defending animal life, environment, and nature (Jalil *et al.*, 2020). Therefore, a huge market of vegan products is rising, involving vegans and non-vegans, and both of them willing to pay for it. With the market for vegan products growing and becoming increasingly visible and imposing, it is necessary to understand that vegan individuals, very ideological and fighters for their convictions, are currently accompanied by non-vegans, who, due to a strong social influence, tend to become more and more involved with vegan products and consequently to buy them. With the growth of the vegan market, it appears that both vegans and non-vegans are willing to pay more, as this way their involvement and purchases contribute to greater well-being, making it a triply interesting market.

This investigation also helps marketers and marketing directors to reach a wider a group of consumers and how to change and adapt their businesses and their marketing strategies. The study shows that not only vegans are consumers of vegan products, but also a non-vegan population is interested in getting involved with vegan products and purchasing them as well. This investigation shows how vegan and non-vegan consumers act and reflect when choosing a vegan product, and by understanding drivers emotions and feelings, marketing strategies can be shaped so that more ideological consumers are included. As for respect for animals and nature is not limited to vegan consumers but also to other consumers that embark in a more ethical behavior in the moment of purchasing.

Results show significant clues to brands and companies forwarding them to customer behavior on the vegan market, considering both vegan and non-vegan consumers interested in vegan products.

7.7.3. Limitations and Future Research Directions

This study is based on cross-sectional data, so it does not allow causality inferring, presenting relationships but not causality between the variables: the ability to identify causality between the variables is therefore, restricted. The proposed model should be replicated amongst other online vegan groups, as well as in other countries and cultures, to understand drivers and consequences of veganism and involvement with vegan products. Vegan movement will gain from the understanding of what drives this lifestyle. Consequently, this investigation aims to scan veganism, vegan products and purchase behaviors of vegans and non-vegans, by seeking to apprehend what influences the involvement with vegan products in both groups. As recommendations for future research, the model could be used with variables like gender, age, personality traits, sensitivity and religion, which could be pertinent drivers of involvement with vegan products.

7.8. References

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Chapter VIII – General Conclusions, Contributions, Implications and Future Research

8.1. General Conclusions

Interest in veganism has been rising due to care for animal welfare and environmental concerns. Vegans are ecologically driven but non-vegans are also drawn to the condition of the planet, so there is a tendency for non-vegan individuals to follow a lifestyle normally associated with vegans. Since veganism is a lifestyle that needs several adaptations on the part of the individuals, it is urgent to adapt the products to the demands of veganism. Therefore, one should remember that being vegan is not only a change in diet, but it also influences clothing, beauty and hygiene products, as well as household cleaning products. In addition, it is necessary not to forget that veganism also rejects entertainment that has the intervention of animals or in any way has damaged their habitat. So, a vegan individual does not drink milk, eat meat, consume honey or palm-oil, wear leather shoes, cashmere sweaters, buy furniture with wood from the Amazon rainforest, go to the zoo or the circus, nor watch movies where animals intervene.

Veganism has suffered a huge development over recent decades: the power of social media, dissemination through blogs, and the proliferation of online groups are quite remarkable. Thus, it seems important and urgent that companies adapt their marketing strategies to the needs of vegan individuals. This will be a challenge and an opportunity for companies. Marketing departments should seize this opportunity as non-vegans also consume vegan products even though they are not fully followers of veganism. This investigation shows that both vegans and non-vegans are united in the wish to protect the planet and do their best in saving it, even if some eat meat and others do not. The rise of animal welfare care has also influenced non-vegans to search and purchase vegan products.

This investigation aims to understand vegan individuals as consumers, how they relate to products, and the influence of their values and beliefs when purchasing. This research also aims to contribute with an extensive conceptual outline, where the reasons to become

vegan and also the consequences of this lifestyle are approached. By identifying the impact of both personal and moral antecedents on vegans and non-vegans, marketers and businesses can adapt their marketing actions when promoting vegan products. The recognition of the differences between the two nationalities studied in this investigation also allows an adaptation when advertising vegan products. Besides these goals, this investigation also aims to understand the influence that being vegan has on social interactions. Furthermore, by studying academic publications regarding veganism, past trends can be identified, and future research paths are also established.

8.2. Contributions

Over the last years veganism has been increasing, whether for health reasons, animal care, environmental issues, or simply because it is trendy to say you are vegan; either way this trend is here to stay. The existing studies concerning veganism are usually related to the reasons why people chose to be vegan and are not focused on identifying vegan consumer segments; we hope the present research brings this subject to the academic arena so that marketing actions can be enhanced. This particular market has not undertaken adequate research, which would allow an understanding of why people choose or not to be vegan from a consumer point of view. The difficulties in finding products that are suitable for the vegan lifestyle, the high prices of those that actually exist, and the difficulty to transition from meat to a total vegan diet have not yet been studied.

Through the first investigation academic publications regarding veganism were studied revealing past research and pinpointing prospective research paths about veganism. The bibliometric approach has uncovered that the vegan individual has not yet been studied as a consumer. Therefore, first this study aims to add more research about veganism itself, underlining its specificity and differentiating it from other food trends and lifestyles. While doing so, this research aims to identify vegans as consumers, and to understand their purchase behavior by clarifying the reasons behind their attitudes and involvement with vegan products. Moreover, it tries to clarify that veganism is not only a diet but requires many lifestyle changes, from clothing to entertainment.

The influence of personal (health awareness and social influence) and moral (environmental concerns and animal welfare) antecedents on attitudes towards vegan products and involvement with vegan products might help to understand the motivations that lead individuals to choose a vegan life style. The investigation also provides a wider understanding of the vegan individual as a consumer.

Former investigations demonstrated the individuals' need to bond by expressing equivalent manners within the tribe. Vegan tribes express the need to be around other vegans, not because of any social influence but because the need to be understood and accepted due to their lifestyle. Understanding what influences a vegan individual to belong to a vegan tribe cannot be limited to vegans, but also to those that choose to consume vegan products. Ethical issues encourage individuals to be in a vegan tribe, whether they are vegan or consumers of vegan products.

In recognizing motivations and emotions, marketers can adjust strategies so that these more ideological consumers can lead their lifestyle without barriers. Besides the vegan individuals, organizations should not forget about individuals that consume vegan products despite not being vegan due to their moral motivations. The relationship between attitudes and beliefs regarding veganism and the consumption of vegan products shows that attitudes towards the consumption of vegan products is influenced by moral concerns, respect for nature and animal world, beliefs not exclusive to vegans.

8.3 Management Recommendations

Veganism is a particular way of life that comprises stopping to ingest and use animal products. The vegan regime is based on plants, any animal driven products are banished, for example eggs or honey. Vegans are also concerned about animal exploitation and usually veganism is also seen as an animal rights movement, therefore veganism is more than a diet, it is a philosophy, a lifestyle with strong ethical standards. These outcomes allow managers and companies to adopt specific strategies to deal with this big and growing market segment.

Vegans are mainly motivated by animal welfare and environmental concerns. Although some of them become vegans due to health reasons, mostly vegans choose this lifestyle because of their moral values and the need to protect and value the environment. Drives to reduce animal intake, safeguard the environment, and protect and respect animal life are steered by ethical ideologies. Therefore, the market is waiting for new products and new offers respecting these values and this lifestyle that turn into a huge market opportunity. Moreover, it is not just a matter of products and services, it is a matter of solutions and different marketing positioning.

With the increase in the consumption of vegan products, it became necessary to understand the importance of non-vegans, because despite not following this philosophy of life, they consume vegan products. With the increase in the consumption of vegan products, it became necessary to understand the importance of non-vegans, because despite not following this philosophy of life, they consume vegan products. Hence marketers and marketing directors can extend their businesses to consumers that are not vegans but choose vegan products in their day-to-day life. By adapting businesses and marketing strategies, consumers are able to purchase vegan products since they feel that their emotions, ideologies and ethics are heard. Companies can therefore widen their vegan products ranges and think about how to address non regular consumers of vegan products. By addressing these non-regular consumers, marketing strategies can be designed and captivate the ones who are willing to pay more for these products. Through the understanding of emotions and feelings, whether they are vegans or non-vegans, premium price products can be created and as a result businesses will reach non-regular consumers of vegan products, which opt for a more ethical conduct during purchase moments. Product quality and environmental consequences is a concern for vegan and non-vegan clients, because it is linked to their purchase decision. Although usually prices are higher regarding vegan products, concerned consumers will pay more, if they understand that it makes a difference. The feeling that they purchase makes a stand, leads them to pay more for premium products. Essentially these consumers express concern towards the environment through their purchases.

A new trend seems to have started, being ecologically aware, vegans already have this awareness intrinsically engraved in them, but non-vegans are increasingly following this new fashion of being ecologically aware. Therefore, it is important to understand how non-vegans tend to choose vegan products. While vegans are influenced by their ideological views and wish to protect the animal world and the environment, non-vegans consume vegan products but don't go so far in giving up meat or wearing leather shoes. As vegans are obvious consumers of vegan products, it is important for organizations to focus on non-vegan consumers, as they begin to follow this current trend of being more environmentally conscious.

Marketing managers have, additionally, new insight on different ways to engage vegan and non-vegan consumers. Brand communities and this need to belong to a tribe means that, for example, in various groups on social networks, we find not only vegans, but also non-vegans since vegan lifestyle is an increasing cultural movement. By being part of tribes, vegans communicate with their peers, but also non-vegans keep up-to-date of the various vegan products and habits. Tribalism and brand communities are, therefore excellent tools to increase customers' commitment. The ever-growing vegan market is rising and is ever so more visible and here to stay. By understanding consumers of vegan products, whether they are vegan or not, the vegan market will gain from it. While vegans are above all very ethical regarding their convictions, non-vegans are influenced by the vegan trend and believe that consuming vegan products is socially well accepted. In both cases, vegan and non-vegans they are willing to pay more in order to follow their convictions, whether these are more ethical or social. Tribalism will assure this expected socialization, as well as a closer connection with vegan brands.

Essentially, understanding what influences the involvement with vegan products, in vegan and non-vegan individuals, will certainly help companies to adapt their products and concepts to this philosophy of life. The role of non-vegans, enthusiasts about vegan products and who can pay more for these products should also not be overlooked by marketers. In addition, companies and marketers can understand from a more solid perspective the ideologies defended by vegans, but also by those who choose to consume vegan products though not following a fundamentally vegan lifestyle. Brands and

companies should analyze and adapt to this increasingly prominent lifestyle in order to grow into this segment.

It is necessary for companies to understand the motivations of vegans, but also consumers of vegan products, a segment that is growing more and more. The motivations are fundamentally linked to ethical issues and not only vegan individuals have these reasons, but also other consumers who are concerned with the environment and with the impact of their actions on planet earth.

8.4. Limitations and Further Work

The present study has common limitations that arise in any investigation; thus, these limitations should be considered contributions to future investigations. Regarding the first study, WoS data presented a limited number of publications regarding only veganism. Major studies solely on veganism are limited and furthermore research on vegans as consumers and consumers of vegan products is almost inexistent. Therefore, the search we proposed was limited to the small number of studies on the subject present in the WoS. The set of studies compiled here were limited by the cross-sectional data, not allowing for causality inferring. It presents relationships but not causality among variables: the ability to identify causality between the variables was restricted.

For further research the proposed models should be replicated in other countries, among other online vegan groups, to understand the drivers and consequences of veganism in order to comprehend attitudes, behavior, and involvement towards vegan products, since cultural aspects appear to be pertinent. These models might also be tested by expanding to other variables such as gender, age, personality traits, religion, and sensitivity – all could be relevant drivers of vegan attitudes, vegan tribalism, and consumer behavior towards vegan products. Finally, the questionnaire could be implemented in a qualitative investigation through focus group and/or individual interviews. Also, an analysis should also be carried out over time, in order to understand the process that leads non-vegans to become vegans.

Appendix I – Survey English Version

Research on purchase intention regarding vegan products

This questionnaire is intended to collect data in the academic field for a PhD investigation in Marketing from the Faculty of Economics of the University of Coimbra (FEUC).

When answering this questionnaire on vegan products, please answer according to what you consider is the closest to your opinion. There are no right or wrong answers.

The average response time for this questionnaire is 7 minutes.

The information provided is completely confidential and anonymous.

1. Are you vegan?

Yes

No

I have consumed vegan products at least one time.

2. Select from the list below, the vegan products you usually consume or have ever consumed:

Food

Cosmetics

Personal hygiene products

Cleaning products

Other: _____

62. I tell my friends about vegan products.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
63. I try to spread the benefits of vegan products.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
64. I do a lot of positive advertising for vegan products.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
65. Gender	Male <input type="checkbox"/>	Female <input type="checkbox"/>					
66. Age _____							
67. Household	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 or more <input type="checkbox"/>	
68. Occupation	Student <input type="checkbox"/>	Student worker <input type="checkbox"/>	Self-employed <input type="checkbox"/>	Employed <input type="checkbox"/>	Unemployed <input type="checkbox"/>	Retired <input type="checkbox"/>	Other _____ <input type="checkbox"/>
69. Education	Elementary (until 4 th grade) <input type="checkbox"/>	Elementary (until 6 th grade) <input type="checkbox"/>	Secondary: (until 9 th grade) <input type="checkbox"/>	Secondary: (until 12 th grade) <input type="checkbox"/>	Professional <input type="checkbox"/>	Bachelor <input type="checkbox"/>	Graduate <input type="checkbox"/>
	Master <input type="checkbox"/>	PhD <input type="checkbox"/>	Other: _____ <input type="checkbox"/>				
70. Nationality	Portuguese <input type="checkbox"/>	Brazilian <input type="checkbox"/>					
71. Income	less than 500€ <input type="checkbox"/>	500€ - 999€ <input type="checkbox"/>	1.000€ - 1.499€ <input type="checkbox"/>	1.500€ - 2.499€ <input type="checkbox"/>	2.500€ - 4.999€ <input type="checkbox"/>	5.000€ or more <input type="checkbox"/>	

49. Os produtos vegans são importantes para mim.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
50. Os produtos vegans continuam a ser do meu interesse.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
51. Estou preocupado com as questões dos animais.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
52. Estou muito envolvido em encontrar e ler informações sobre produtos vegans.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
53. Estou disposto a comprar produtos vegans mesmo que ache que terão um custo alto.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
54. Vale a pena gastar dinheiro na compra de produtos vegans.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
55. Não me importo de gastar dinheiro para comprar produtos vegans.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
56. Fico feliz ao comprar produtos vegans.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
57. Espero consumir produtos vegans.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
58. Eu compraria produtos vegans.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
59. Pretendo consumir produtos vegans.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
60. Pretendo comprar produtos vegans nos próximos dias.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
61. Eu recomendo produtos vegans a muitas pessoas.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
62. Falo aos meus amigos sobre produtos vegans.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
63. Tento divulgar os benefícios dos produtos vegans.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
64. Eu faço muita propaganda positiva relativamente a produtos vegans.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
65. Sexo	Masculino	Feminino					
	<input type="checkbox"/>	<input type="checkbox"/>					

66. Idade _____							
67. Agregado familiar	1	2	3	4	5	6 ou mais	
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
68. Profissão	Estudante	Estudante trabalhado r	Trabalhador por conta própria	Empregad o	Empregado	Reform ado	outro _____
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
69. Habilitações literárias	Primária (até ao 4º ano)	Elementar (até ao 6º ano)	3º Ciclo (até ao 9º ano)	Secundário: (até ao 12º ano)	Profissional	Bacharel ato	Licenciatura
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Mestrado <input type="checkbox"/>	Doutoramen to <input type="checkbox"/>	Outro: _____				
70. Nacionalidade	Portugal <input type="checkbox"/>	Brasil <input type="checkbox"/>					
71. Rendimentos	Menos do que 500€	500€ - 999€	1.000€ - 1.499€	1.500€ - 2.499€	2.500€ - 4.999€	5.000€ ou mais	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		