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Lettuce Beet the Stigma! - Exploring Influential Factors in Vegan Transitioning

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“The views stated in this thesis are those of the author and not necessarily those of the supervisor, second assessor, Erasmus School of Economics or Erasmus University Rotterdam.”

Abstract

Veganism is an affordable way to reduce food-related health risks, especially for low-income households, most susceptible to poor health due to lacking resources. Nonetheless, many barriers to a plant-based diet exist today that contribute to the stigmatization and discrimination of vegans today. This study delves into factors influencing intrinsic motivation to commence a plant-based diet by repositioning the connotation around veganism. Besides this, an individuals' perceived importance regarding social support, family support, and the presence of materials are accounted for to explain the degree of intrinsic motivation. To conduct this research, 280 survey responses of US respondents were collected in an online experiment. In the survey, participants were exposed to either a neutral, ascetic, or hedonic discourse on veganism and consequently indicated their level of intrinsic motivation. The data was analysed using ordinal logistic regression. The results indicate that the type of discourse does not affect an individual's intrinsic motivation. Furthermore, the less an individual cares about social support or the more an individual cares about the presence of materials, the higher the likelihood will be that the individual is intrinsically motivated to commence a plant-based diet. Lastly, the study found that conservative individuals tend to be more intrinsically motivated to commence a plant-based diet than liberal individuals. The implications of the study demonstrate that veganism has gained acceptance in society, but the type of discourse does not affect this relationship. Since past papers identified low-income households to care little about personal health benefits of their diet, future research should position veganism as inexpensive to motivate more low-income households to commence the diet and lower their risk of food-related diseases.

Keywords: vegan, diet, consumer behavior, intrinsic motivation, social change

Dedication and/or acknowledgments

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1. Introduction

The rising number of obese people in developed nations has led not only to a global health crisis but also to overloaded, resource-strained health care systems around the world. In the US, costs of obesity-associated chronic diseases alone make up 47% of the national health care costs (Waters and Graf, 2018). Further diet-related diseases such as heart disease cancer or diabetes add another 20% of cost burden to the system (Waters and Graf, 2018). But also Europe has become an epicentre of obesity with a three-fold increase in obese people over the last 20 years (a Żukiewicz-Sobczak et al., 2014). More interestingly, many developed nations have observed the surge of a social oxymoron with their population, also known as the poverty paradox (Żukiewicz-Sobczak et al., 2014). The poverty paradox explains the relationship between obesity and poverty in developed nations (Żukiewicz-Sobczak et al., 2014). The American Diabetes Association found that individuals living in the most poverty-dense counties in the US have the highest likelihood of becoming obese (Levine, 2011). It is argued that obesity amongst the population of poor people stems from lack of physical activity, higher unemployment, lower educational level, and irregular meals (Żukiewicz-Sobczak et al., 2014). To relieve the health care system and decrease the level of economic vulnerability poverty-stricken communities are already subject to, governmental institutions should find ways to educate their nations about proper nutrition and provide the means necessary to encourage a healthy, sustainable diet.

One way to reduce obesity rates and health-care related costs is a transition to veganism. Veganism is a diet that excludes any form of animal-related foods such as meat, dairy, and eggs from an individual's diet (Parkinson & Twine, 2019). There are several forms of veganism with some approaches excluding animal-related products on top of animal-related foods (Parkinson & Twine, 2019). The comprehensive China study, conducted in the 1980s by Campbell, found that nutrients from animal-based foods foster certain tumor growth while plant-based foods decrease tumour growth (Redwood & Shealy, 2005). Furthermore, the author found that adequate nutrition can eliminate diseases such as adult-onset diabetes, heart disease, breast and prostate cancer, among others (Redwood & Shealy, 2005). Coupled with other positive influences of veganism such as the reduction of livestock farming, this environmentally sustainable practice could thus help tackle the obesity problem many western countries face today and save millions in health care costs.

The main challenge that remains is that veganism is an ideology that faces much negative stigma (Parkinson & Twine, 2019). This is due to the lack of information available, the belief disparity between omnivores and vegans as well as many demographic and cultural differences between individuals (Parkinson & Twine, 2019). For example, omnivores might associate a vegan diet with being nutrition deficient, posing too many restrictions, and being unnatural (Parkinson & Twine, 2019). Besides personal opinions, family dynamics, gender, and media representations of veganism play a crucial role in how open individuals are to consider a transition to veganism (Parkinson & Twine, 2019). Although

researchers have identified barriers to transition to a vegan diet, little research has been done to investigate how to overcome these barriers.

1.1 Academic Motivation

The articles selected, address several theories including the theory of planned behaviour, self-determination theory, intergroup-threat theory, cognitive dissonance theory, identity theory, the notion of identity salience, and the practice approach to social change. Papers that incorporate the theory of planned behaviour and self-determination theory, discuss the origins of intrinsic motivation and to which extent an individual's familial upbringing and exposure to either ascetic or hedonic discourse influence the motivation to commence a plant-based diet. In contrast, articles discussing intergroup-threat theory and cognitive dissonance theory explain what factors lead to perceived intergroup threat and how this translates into the discrimination and the stigmatization of vegans by omnivores. Furthermore, this section explains the face-saving strategies that current vegans have adopted as a result of this divide in value systems between vegans and omnivores. The articles incorporating identity theory, and the notion of identity salience go further into detail about the origins of values and the corresponding adoption of an individual's identity. Articles in this section discuss how identity salience can be an intrinsic motivator to commence a plant-based diet and how an individual's identity will adjust to continue this dietary transition long-term. Lastly, the articles highlighting the practice approach to social change discuss how changes in an individual's environment can reduce the barriers to transition to a new diet. In the selected articles, themes such as stigma or lacking family support are depicted through the lens of an individual following a plant-based diet. On the other hand, themes such as information about the health benefits of a plant-based diet, identity shaping factors expressed by vegans, or impression management due to differences in belief systems follow an entirely different narrative. It is hence important to combine insights from articles discussing these themes as it will create an understanding of what perceptions are shared by vegans and omnivores as well as highlight the differences in their impressions. Combining these themes, my research aims to uncover potential strategies that could mitigate the perceived barriers to veganism. Although the selected articles suggest a course of action, no research provides specific findings on how to motivate an omnivore to commence a plant-based diet. Despite the many different motivators of commencing a plant-based diet as well as the extent to which such a diet is acted out, I will focus solely on the dietary aspect. I hypothesize that by focussing solely on the health aspect a vegan diet brings with it, omnivores will perceive a plant-based diet to be more in line with their belief system - thus leading to a more positive perception. Furthermore, I want to investigate to what extent this positive perception is strengthened, when an individual perceives the commencement of veganism as a daring act of opportunity that fosters overall family well-being and contributes to a societal change serving a greater purpose.

1.2 Managerial Motivation

Portrayals of veganism in the media and literature follow a predominately ascetic discourse, eliciting themes of restriction, extremism, and oblation (Cole, 2008). With my research, I aim to build on the findings of Cole (2008) to reposition a plant-based diet as a hedonic act of personal choice. Representing veganism as a bold, determined choice to act out the duty to care for one's health and one's family's health for the sake of a needed social change might allow for a shift to a hedonic discourse. Finding ways to present a plant-based diet in a more positive light to omnivores will provide a strategic direction to marketers of vegan dietary products and services. Besides retaining vegan customers, plant-based food producers also aim to attract new vegan and omnivore customers. The goal should not be to solely serve customers that are already following a plant-based diet but furthermore persuade omnivores with carefully curated brand messages to try out vegan products. My research will aim to provide insights into ways of tailoring such brand messages to the growing customer segment that is interested in a vegan diet but has not yet converted due to perceived barriers. With my findings, producers of vegan products or service providers facilitating a vegan transition will be able to improve the targeting of their customers, which could lead to an increase in brand loyalty and revenues.

1.3 Research Question

With my research, I aim to answer the following question:

How does repositioning the connotations of veganism influence the likelihood of an individual to commence or continue a plant-based diet long-term?

Sub Questions:

- 1) Does the repositioning elicit different responses for men and women?
- 2) Does the repositioning elicit different responses for low and high-income households?
- 3) Does the repositioning elicit different responses for religious and non-religious people?
- 4) Does the repositioning elicit different responses for different political philosophies?
- 5) What influence does repositioning have on perceived barriers such as lacking social and family support or lacking dietary-related knowledge, skills and ingredients?

2. Literature review

2.1 Introduction

For a transition to a new diet to take place, an individual must be stimulated to change old eating patterns. Change can be motivated by a variety of factors including a shift in personal values, influence of an individual's social circle, or perceived ease of transition fostered by the adjustment of an individual's environment. Past literature has evaluated motivations for dietary change or persistence to stick with learned behaviours. The selected articles cover different perspectives on veganism which are further informed by social change theories. The literature review aims to highlight these differences in perspectives by grouping each article into themes covering each social change theory. The theories include the theory of planned behaviour, self-determination theory, intergroup-threat theory, cognitive dissonance theory, the practice approach to social change as well as identity theory, and the notion of identity salience. Correspondingly, the themes relating to different drivers of change include internalization, personal intentions, in-group perceptions, environmental mediators, and personal identity. Based on the themes and their corresponding theories, the literature review will discuss how intentions for change are shaped by particular motivators. Furthermore, the literature review will also highlight how these motivators overlap and influence an individual's change intentions. This will lay the groundwork for understanding why individuals have a specific perception of veganism and their corresponding motivation to commence a plant-based diet.

2.2 Theory of Planned Behaviour

The theory of planned behaviour evolved to predict and explain human behaviour in a specific context (Ajzen, 1991). As an extension of the theory of reasoned action, a central factor of the theory of planned behaviour deals with individuals' intentions to perform certain behaviours. Ajzen (1991) defines intentions as indicators of people's willingness to try and assumes that they capture motivational factors influencing behaviour. Three factors of intention are the attitude towards a behaviour, the social factor, and the perceived behavioural control (Ajzen, 1991). Whereas the first factor captures the favourable or unfavourable attitude of the individual towards a behaviour, the second factor evaluates the perceived social pressure individuals experience to perform this behaviour (Ajzen, 1991). Lastly, the perceived behavioural control refers to an individual's expectations of the ease or difficulty associated with performing the behaviour. As a rule of thumb, the author states that the greater the attitude and the subjective norm, the greater the perceived behavioural control (Ajzen, 1991). For perceived behaviour control to be high, the expectancy of success of performing the task must also be high. Furthermore, resources and opportunities available to the individual also determine how high the degree of behaviour control is perceived to be (Ajzen, 1991). To sum up, the degree of behavioural belief, normative belief,

and control belief experienced by an individual is the degree to which cognitive self-regulation will take place and behaviour will be acted out (Ajzen, 1991).

At the core, the theory of planned behaviour argues that personal intentions shape change. Cole (2008) argues that the ascetic discourse with which veganism is displayed in the literature has a large effect on an individual's intentions to show interest in the diet. Firstly, since a plant-based diet is often described using terms such as “omission”, “avoidance” or “restriction”, the attitude of an omnivore towards veganism is expected to be less favourable (Cole, 2008). To illustrate this ascetic discourse, Cole (2008) compares vegans' “abstention from meat and dairy products” to non-smokers' “abstention from tobacco consumption”. Both statements depict an individual's choice of omitting potentially dangerous substances from their diet but only one of these statements is seen in a favourable light. Secondly, the author argues that the depiction of an omnivore diet as a superior choice to veganism increases the social pressure of an individual to conform to the former. Associations of meat with status and male dominance further hinder an individual's intentions to pursue a dietary change to veganism (Cole, 2008). Lastly, opinions given in the literature describe veganism as a “demanding regime of abstemiousness, too difficult to maintain”, which hinders an individual's perceived behavioural control (Cole, 2008). To positively influence an individual's intentions of commencing a plant-based diet, Cole (2008) suggests the literature to start following a hedonic discourse of veganism. Not only would this encourage more individuals to be interested in the diet, but it would also more accurately reflect the richness of a vegan diet. Despite popular belief, vegans report an increasingly diverse consumption of food, better health, a more nutritionally sound diet, and an overall hedonic sensitivity to food. According to Cole (2008), these facts have not yet been devoted sufficient attention in the literature and hinder the emergence of positive intentions towards veganism.

Graca, Calheiros & Oliveira (2015) measured individuals' intentions to reduce meat consumption by incorporating the theory of planned behaviour in a questionnaire. Factors such as attitudes, the subjective norm towards meat, human supremacy, eating habits, dietary identity, and the willingness to follow a plant-based diet were evaluated to measure the degree of meat attachment (Graca, Calheiros & Oliveria, 2015). Their results revealed four dimensions of meat consumption namely hedonism, dependence, affinity, and entitlement. The authors found, similar to Cole (2008), that individuals that struggled the most with reducing meat consumption were individuals that strongly identified with eating meat due to their gender (primarily males), their values of human dominance over males, or their perceived social pressure to eat meat (Graca, Calheiros & Oliveria, 2015). Furthermore, individuals that experienced a great amount of pleasure eating meat were found to be least likely to reduce their meat consumption. To summarize, both papers discuss how an individual's intentions shape change and how these intentions are informed by personal attitude, the social norm, and the perceived behavioural

control. Although the personal attitude can be changed, both papers display that an individual's environment and background greatly influence the degree to which such a change can occur.

H1: Hedonic discourse of veganism influences an individual's intrinsic motivation to commence a plant-based diet more positively than ascetic discourse.

2.3 Self-determination Theory

The roots of self-determination theory date back to the 1980s and discuss differences between intrinsic and extrinsic motivation. Furthermore, the authors Gagné & Deci (2014) argue that besides intrinsic and extrinsic motivation, introjection and identification are other motivations that need to be considered when studying an individual's self-determination. The theory states that for intrinsic motivation to flourish, people must experience autonomy and a mastery of the environment. Although the second component exists for all kinds of motivations, a combination is needed for intrinsic motivation to arise (Gagné & Deci, 2014). On the other hand, rewarding an individual for something he or she is intrinsically motivated to do, will decrease this motivation. Further, the authors of the theory argue that there is a difference between intrinsically motivated people and ego-involved individuals. This is where the distinction between introjection and identification is made. Introjection involves doing something for ego reasons and perceiving an external locus of causality. On the other hand, identification involves doing something out of personal values evoking an internal perceived locus of causality. Instead of being intrinsically motivated, ego-involved individuals are engaging in a behaviour because their feelings of worth are dependent on their actions. Studies investigating the difference between these two types of motivations found that whereas a positive affect is reported for intrinsically motivated people, the positive affect is absent and replaced with feelings of pressure or tension for ego-involved motivated people (Gagné & Deci, 2014). The differences between these two motivations stem from internalization, a concept that is contained in self-determination theory and describes how a context is perceived by an individual on an internal level (Gagné & Deci, 2014). If the context appears pressuring or controlling, individuals will become ego-involved, and evaluate their worth based on a value or regulation they place on the context. On the other hand, the context that makes individuals feel autonomous and agentic will lead individuals to identify with this value and integrate it into their core self-regulatory system (Gagné & Deci, 2014). Relating this to autonomy and mastery of the environment, autonomous types of motivation are internalization and intrinsic motivation. Motivations including merely the control component are referred to as introjection or external motivation (Gagné & Deci, 2014). Knowing that autonomous motivations evoke more positive affect compared to controlled motivations the question becomes: How should internalization and intrinsic motivation be promoted?

At large, self-determination theory describes how internalization shapes change. Chwialkowska (2018) argues that socialization also plays a big factor in the extent to which a child is motivated to consume a

more sustainable diet after moving out of the family home. Learning routines from a young age onwards and participating in collective family rituals are sources of emotional connection, often hindering the motivation for dietary change to take place (Chwialkowska, 2018). Furthermore, the dietary keeper (e.g. a parent or spouse) oftentimes influences the dietary choices of the family which, in turn, conforms to these dietary choices to prevent conflict. In their paper, the authors Sobal & Hanson (2014) also highlight this effect of families on food settings. The authors mention that family meals are oftentimes seen as healthy forms of eating which elicit social pressures for some family members to share these meals regularly (Sobal & Hanson, 2014). Furthermore, the differences in personal eating preferences can be a source of conflict between family members, and to preserve harmony, individuals often conform to the dietary choices made by the family. The findings of the authors conclude that, on average, the respondents of the study eat five shared family dinners per week. Half of the responses reported that take-out meals were incorporated into this weekly eating schedule, regardless of racial differences, marital status, children in the household, level of education, or employment (Sobal & Hanson, 2014).

Relating to self-determination theory, Chwialkowska (2018) argues that sustainability values need to be integrated into oneself, to adopt a more environmentally friendly diet long-term. This integration refers to internalization which ranges from an external motive, introjected motive, and identified motive to an integrated motive. In her study, the author found that only children that adopt the deepest type of internalization, the integrated motive, sustained a vegan diet for 2-3+ years (Chwialkowska, 2018). In her study, Chwialkowska (2018) also distinguished between four types of families of which only the "Tree Hugger" family, motivated to follow a vegan diet due to ethical and environmental concerns, showed enough internalization of sustainability values. Other family types, driven to consume a vegan diet due to health reasons, their social circle, or the weight-loss ambitions of a dietary gatekeeper did not show sufficient internalization of sustainability values (Chwialkowska, 2018). Hence children raised in the "Tree Hugger" family setting are more likely to internalize values of sustainability and consume a sustained, vegan diet themselves compared to children of other families. Although Sobal and Hanson (2014) do not explicitly describe how the internalization of vegan values motivates individuals to commence a plant-based diet the authors report an inverse relationship between obesity and the frequency of meals shared for children within the families (Sobal & Hanson, 2014). Thus, it can be hypothesized that a child growing up in a family in which little importance is placed on shared meals, will most likely not internalize values related to a health-conscious or plant-based diet.

To summarize, Chwialkowska (2018) finds that the value system of a family has a strong influence on the extent to which internalization will gain presence within an individual over time. Sobal & Hanson (2014) further highlight that this value system is difficult to modify on a family and individual level due to the pressures to preserve harmony associated with it. Therefore, Sobal and Hanson (2014)

indirectly support the findings of Chwialkowska (2018). The pressures perceived by family members do not have to be confrontational - instead, they oftentimes develop subconsciously as an individual grows older. This in turn affects an individual's presence or absence of internalized values to embrace a long-term dietary change. Based on these findings, it would be interesting to understand to what extent a hedonic discourse of veganism could shape family values and thus influence an individual's intrinsic motivation to transition to a plant-based diet.

H2: Family support regarding a transition to a plant-based diet influences an individual's intrinsic motivation to commence a plant-based diet, regardless of discourse.

H3: Hedonic discourse of veganism reduces the need for perceived family support to be intrinsically motivated to commence a plant-based diet.

H4: Ascetic discourse of veganism increases the need for perceived family support to be intrinsically motivated to commence a plant-based diet.

2.4 Intergroup Threat Theory

Intergroup threat theory describes components of the perceived threat from outgroups by distinguishing between realistic threat and symbolic threat (Rios, Sosa & Osborne, 2018). Whereas realistic threats are tangible concerns about competition for resources, concerns about physical safety, or a combination, symbolic threats are referred to as intangible threats to ingroup beliefs, values, attitudes, or moral standards (Rios, Sosa & Osborne, 2018). These threats arise because an in-group perceives group differences and believes its values to be morally right and superior to that of the other group. Individuals within the in-group will tend to cling to the beliefs of their group and reject the views of the opposing group. Intergroup threat theory recognizes stereotypes and intergroup anxiety as antecedents of realistic and symbolic threats (Rios, Sosa & Osborne, 2018). Further, the theory distinguishes between group and individual threats. A group realistic threat could for example be a threat to a nation, industry, or company the individual takes part in, whereas an individual realistic threat could be a threat to the individual's job or business. Similarly, a group symbolic threat could be a threat to the ingroup's fundamental values whereas an individual symbolic threat could pose a threat to an individual's belief system.

2.5 Cognitive Dissonance Theory

Tapping further into individual symbolic threats, cognitive dissonance theory explains how an individual responds to such perceptions of threat. Festinger (1962) describes dissonance as an inconsistency between attitudes or behaviours. He argues that to restore harmony, an individual must change one of the two factors to eliminate the dissonance. The author proposes that changing the

existing beliefs, adding new beliefs, or reducing the importance of beliefs will ultimately reduce the perceived dissonance (Festinger, 1962). Changing existing beliefs can be difficult for people since this act includes the alteration of a well-learned behaviour (such as eating meat or dairy products). The author argues that it is much easier to add new beliefs or reduce the importance of beliefs. Examples of this could be to think that humans are made to eat meat or to start believing that certain animals are made to be eaten. Interestingly, studies found that hypocrisy can increase dissonance. For example, if a subject is being asked to educate an audience on a certain behaviour that the subject itself is not performing, the likelihood increases that the subject will start to practice the behaviour long-term to reduce personally perceived dissonance (Festinger, 1962).

An example related to veganism and rooted in cognitive dissonance theory is the meat paradox. This paradox refers to omnivores aligning their beliefs and attitudes to justify their behaviour (Loughnan, Bastian & Haslam, 2014). Though most people do not want to harm animals, omnivores justify their consumption of meat with livestock's lack of moral status, inability to feel harm or subservience to humans. By displaying authoritarianism and social dominance, omnivores are therefore able to morally justify their partaking in the consumption of animals (Loughnan, Bastian & Haslam, 2014). Markowski and Roxburgh (2019) also address the meat paradox by investigating personal and social reasons for eating meat and discussing the in-group beliefs of omnivores regarding vegans. According to the authors, personal reasons for eating meat include an affective attachment, an identification with masculinity, and a denial of animal pain or animal minds. Social reasons, on the other hand, include the commonality that is established in a group when eating the same food, the belief that a meal is no meal without animal protein, the symbolization of meat as a source of strength, and the associations of human superiority over animals and male superiority over females (Markowski & Roxburgh, 2019).

Given the personal and social reasons for eating meat and the degree to which individuals identify them, it is evident that the omnivore in-group does perceive group symbolic threats from the vegan out-group. The core argument of intergroup threat theory is that an individual's in-group shapes the extent to which change is embraced. Markowski and Roxburgh (2019) state that omnivores view vegans as personal disruptors and activists attempting to subvert social conventions - most likely due to vegans' traditionally direct, confrontational approach in highlighting the cruelties of an omnivore diet. This gives rise to perceived symbolic threats of omnivores on a group level and an individual level (Markowski and Roxburgh (2019)). As a result, omnivores actively stigmatize vegans to avoid being stigmatized themselves. This ultimately leads to a great degree of discrimination being expressed towards vegans as well as omnivores' consolidation of their current belief system to reduce the cognitive dissonance raised by the plant-based out-group. Related to the research focus of Markowski & Roxburgh (2019), MacInnis and Hodson (2017) observed in what environment the intergroup threat theory related to veganism was most prominent. Their findings conclude that the perceived threats are

highest in western society for individuals supporting right-wing authoritarianism or social dominance orientation (MacInnis & Hodson, 2017). The higher these factors are in an individual, the more likely they are to believe in the supremacy of humans over animals and therefore be exposed to a potential vegan out-group threat. Similar to Markowski and Roxburgh (2019), MacInnis and Hodson (2017) conclude that the discrimination of social norm-challenging groups like vegans is not seen as a current societal problem since it stems from socially dominant groups, seemingly protecting the status quo.

Poots & Parry (2007) approach the in-group belief systems of vegans and omnivores from a more intimate, interpersonal perspective. The authors examine the differences in sexual preferences of vegans and omnivores and their respective responses to it. The term *Vegansexuality* emerged in 2007 and relates to the preference of vegans to only engage in sexual relations with other vegans (Poots & Parry, 2007). By examining responses to this phenomenon on the internet news, personal blogs, and chat rooms the authors come across a so-called “meat or macho culture” (Poots & Parry, 2007). *Vegansexuality* in the eyes of self-identified male meat-eaters is seen as a form of sexual abstinence from meat-eaters practiced by vegan women who deny their true desires. Further, practitioners of *Vegansexuality* are seen as losers, failures, and bigots (Poots & Parry, 2007). These findings group symbolic threats experienced by omnivore males as well as support the findings of MacInnis & Hodson (2017) which highlight that the perceived threat is highest for male individuals. Further, these findings highlight the social reasons for eating meat such as the symbolization of meat as a source of strength and the associations of human superiority over animals and male superiority over females (Markowski & Roxburgh, 2019).

To minimize the risk of symbolic threat perceived by omnivores, vegans and vegetarians have adopted several face-saving strategies when discoursing with omnivores (Greenbaum, 2012). In her study, Greenbaum (2012) discusses face-saving strategies of vegetarians and vegans and identifies ways in which the symbolic threat perceived by the omnivore in-group can be reduced. Her findings conclude that common tactics of vegans center around avoiding confrontation, highlighting the health benefits of veganism, leading by example, and finding the appropriate timing to address dietary choices (Greenbaum, 2012). Greenbaum (2012) argues that the reactions of omnivores to vegans are displays of carnivorous guilt and that a confrontational vegan approach will not help in advocating a plant-based diet. Instead, vegans should employ “face-saving” strategies and focus on values that both omnivores and vegans’ value (Greenbaum, 2012). An example of this is the health benefits associated with a particular diet since it is assumed that individuals are interested in consuming healthy foods regardless of diet. Furthermore, this shifts the focus from veganism as an altruistic practice to a selfish practice since transitioning to a plant-based diet for health benefits does not directly relate to animal welfare or environmental concerns (Greenbaum, 2012). Another strategy that Greenbaum (2012) identified in her study was to lead by example. Instead of attempting to convince omnivores to transition to a plant-

based diet, vegans should focus on expressing their happiness and contentment with the diet. Participants of Greenbaum's study argue that most humans are followers instead of leaders and an indirect public display of the advantages of a vegan diet would be more effective than a direct, confrontational approach. This factor also plays into the last strategy which focuses on the appropriate timing. Rather than directly engaging with an omnivore, vegans tend to remain silent until being asked about their diet (Greenbaum, 2012). This further motivates the indirect, non-confrontational approach which vegans oftentimes employ to steer away from their traditionally confrontational stereotype.

Both MacInnis and Hodson (2017) and Markowski and Roxburgh (2019) conclude that solutions to promote harmonious relations among omnivores and vegans are imperative. Poots & Parry (2007) add to this by forecasting that the interrelatedness of topics of sexuality, gender, and ethical consumption will continue to generate discussions in the future. Markowski and Roxburgh (2019) found that vegans motivated by animal rights were evaluated most negatively, followed by vegans motivated for environmental reasons, and lastly vegans motivated by the health benefits of a vegan diet. Greenbaum's findings indirectly support this as her study highlights the face-saving strategies vegans employ in conversations with omnivores to steer away from their negative stereotypes (Greenbaum, 2012). This raises the following question: Would a shift to a face-saving discourse of veganism keep cognitive dissonance at a minimum and reduce the symbolic threat perceived by omnivores?

H5: In-group support regarding a transition to a plant-based diet influences an individual's intrinsic motivation to commence a plant-based diet, regardless of discourse.

H6: Hedonic discourse of veganism reduces the need for in-group support to be intrinsically motivated to commence a plant-based diet.

H7: Ascetic discourse of veganism increases the need for in-group support to be intrinsically motivated to commence a plant-based diet.

2.6 Identity Theory and the Notion of Identity Salience

The identity theory consists of commitment and identity salience and argues that the self is made up of several identities which can be organized in hierarchical order. Commitment describes the larger concept of the structure of role relationships, at large, the concept of society. Identity salience, on the other hand, refers to the larger concept of the self, also known as the concept of personality (Stryker & Serpe, 1982). The identities making up an individual can be structured into a salience hierarchy. Hereby, the salience explains the location of identity in the hierarchical structure. Stryker & Serpe (1982) argue that whether a behaviour will be acted out is dependent on how the salience of identity interacts with defining characteristics of situations and other self-characteristics. Therefore, the degree to which the situation allows alternative identities to arise, and characteristics of self-esteem or satisfaction to

flourish will alternate the intentions to engage in a behaviour. Stryker & Serpe (1982) argue that both commitment and identity salience is directly and positively related to the time spent in an identity. Put differently, the social and personal value that an individual attaches to a certain identity will determine how strongly he or she associates and engages with this role.

Relating to this Waters (2020) discusses the personal values leading to people adopting a vegan diet. In his study, he evaluates how people contemplate or reject veganism (Waters, 2020). The author argues that the more a person's values align with the values of a particular movement, the more likely this person is going to identify with this movement (Waters, 2020). As an example, Waters (2020) mentions an individual that adopts a vegan diet out of the selfish reason to like herself better because she values animal rights and wants to feel more authentic. Similarly, Waters (2020) mentions that current vegan individuals agree with the notion that their eating patterns are a part of their identity more than former vegans. His findings conclude that vegan individuals more often frame the values of veganism as congruent with their priorities. For example, a participant of the study cited that his work with an animal rights organization led him to adopt a vegan diet because this seemed congruent with his concern for animals (Waters, 2020). Similarly, a participant with high cholesterol adopted a vegan diet after she increased her knowledge about plant-based diets and her salient identity shifted to a more health-oriented version of herself. Waters (2020) does however mention that the assessment of personal priorities can involve competition and that veganism must become salient for an individual to commence a plant-based diet. The author suggests prospective vegans focus on prioritizing altruism and health benefits to stick with a plant-based diet long-term. Vegan advocates should not only focus on how to become vegan but also explain how to remain vegan since the identities of individuals are expected to shift when certain personal values become less salient (Waters, 2020).

Although their research is not directly related to identity theory, the findings of Radnitz, Beezhold, and DiMatteo (2015) also show that identity salience motivates behaviour. In contrast to Waters (2020), the authors focus their study on evaluating the health benefits associated with following a plant-based diet. They found that vegans following a plant-based diet due to health reasons engaged in healthier dietary choices such as eating more fruits and fewer sweets than vegans motivated by animal welfare (Radnitz, Beezhold & DiMatteo, 2015). Nonetheless, vegans motivated for ethical reasons were found to stay on the diet for longer. This finding can be linked to the notion of identity salience as a concern for animal welfare suggests a transition to veganism whereas an eagerness to eat a nutritionally sound diet could be achieved without following a plant-based diet. Both papers address the behavioural adjustments individuals make according to shifts in their value systems that shape their identity. Whereas Waters (2020) addresses reported behavioural shifts in omnivores, Radnitz, Beezhold, and DiMatteo (2015) highlight the differences in behaviours vegans engage in based on the values salient in their current identity. Though identity salience is a noteworthy predictor of an individual's change of behaviours, it

can be argued that the social cues an individual receives from his or her environment strengthen or weaken the identity this individual adopts.

2.7 Practice Approach to Social Change

The practice approach to social change argues that social practices are made up of the three components meanings, materials, and competencies (Spurling & McMeekin, 2013). A practice emerges, changes, or disappears when the components form, sustain or break their connection (Shove et al. 2012). To engage in a practice or change a practice all three of these components must be present. Meanings refer to the cultural conventions, expectations, and socially shared meanings about the practice. Materials, on the other hand, refer to the objects, tools, and infrastructure needed to engage in the practice (Spurling & McMeekin, 2013). Lastly, competencies include the knowledge and embodied skills necessary to perform. Spurling & McMeekin (2013), authors of a report on sustainable policy interventions, argue that recrafting practices through the incorporation of the three components of practice can lead to successful intervention strategies. In their example, they discussed the new Nordic diet, an attempt to eat more local, Nordic food in Scandinavian countries. To enable consumers to engage in this dietary change material, competencies and meaning had to be present. The material, food, was easy to acquire as the diet consisted of local ingredients. To account for competencies, cookery courses were made available to enable participants to learn to cook with local, fresh ingredients. Lastly, the meaning of the new practice established itself since participants saw the diet as an identity movement to eat local food that furthermore had a lower ecological footprint than their previous food choices.

Although the report of Parkinson and Twine (2019) highlights several barriers hindering the transition to veganism, the authors also propose the practice approach to social change to overcome these barriers. The most common barriers mentioned were concerns about nutrient and calorie deficiencies, the overall lack of convenience that comes with having to take time in the supermarket to read labels and cook meals from scratch, perceptions of veganism being restrictive or unhealthy, and lastly the belief that meat consumption is natural (Parkinson & Twine, 2019). The authors argue that to change to a vegan diet, an individual must derive meaning from it as well as own the materials and competencies needed to succeed. Meanings hereby refer to the knowledge and information an individual must have about the diet, materials refer to the food ingredients and competencies refer to the individual's ability to prepare a vegan meal (Parkinson & Twine, 2019). The findings of the report conclude that to make a transition to a plant-based diet easier, a focus on the individual is needed that minimizes the barriers to transition and enables the individual to access all three components of the new social practice. The findings of Parkinson and Twine (2019) are in line with the findings of Crawford and Worsely (2006) since their study also focuses on the perceived benefits and barriers to veganism. The authors found that especially

young, university-educated individuals are highly aware of the benefits of a vegan diet such as weight control, improved quality of life, or disease prevention. Further, the perceived benefits of a plant-based diet outweigh the perceived barriers. The most prevalent barriers perceived by participants of the study were lack of dietary information, lack of individual desire to alter the current diet, lack of family support, and lack of options when eating out (Crawford & Worsely, 2006). As a suggestion for the implementation of the findings, Crawford and Worsely (2006) argue that there is a need for more appropriate nutrition education and information and support regarding the preparation of vegan meals. The authors also suggest that an increased emphasis on plant-based food advertising and greater publicity of the diet could make the diet more attractive and help to overcome the barrier of lacking social support (Crawford & Worsely, 2006). By implementing these actions, the three components of social practice (meanings, materials, and competencies) would be met.

In contrast to Parkinson & Twine (2019) and Crawford & Worsely (2006), Twine (2018) focuses his study solely on the material aspect of the practice approach to social change. The author addresses the four partially overlapping modes of material constitution that play a significant role in strengthening the links between the elements of practice. More specifically, the author addresses how *material substitution*, *new food exploration*, *food creativity*, and *taste* transition foster the change to a plant-based diet. *Material substitution* is referred to as vegan replacements for traditional omnivore foods such as plant-based milk or vegan cheese. *Food creativity* refers to the re-invention of traditional omnivore foods using merely vegan ingredients. Twine (2018) highlights examples such as aquafaba, a common vegan egg replacement in desserts, or vegan cream cheese made out of cashew nuts. The author argues that this factor contests the negative meanings associated with veganism, as it allows individuals to creatively re-construct omnivore flavours. This re-construction also connects to the third factor known as *new food exploration*. Research has found that vegans tend to explore new foods, not consumed before transition (Twine, 2018). This counteracts the commonly shared understanding of veganism as an ascetic, restrictive practice also highlighted in the study of Cole (2008). Lastly, Twine (2018) mentions *taste* as a facilitator for a plant-based dietary transition. The author finds that the transition to veganism allows for an exploration of many new flavours and tastes which make it exciting and easier than expected to stick to the new dietary regime (Twine, 2018). To conclude, the author suggests focusing on the materiality of veganism instead of the ethical aspect which often is the primary way of advocating for the diet (Twine, 2018). Focussing on these factors could lead to a diffusion of the vegan practice and simplify the advocacy to sustainable food transition (Twine, 2018).

All three authors refer to the role that the presence and interplay of materials, meanings, and competencies play, in bringing about changes in social practices. Parkinson and Twine (2019) and Crawford and Worsely (2006) show what profound influence meanings and competencies can have on informing choices of social practice by highlighting the need for information sharing regarding

veganism and support in sourcing and preparing vegan meals. Twine (2018) further explains how the four factors of materials can motivate an individual to embrace a plant-based diet. The practice approach of social change should therefore be regarded as a powerful approach to guide a sustainable transition to new social practices. Nonetheless, the missing link that all papers fail to address, is the extent to which a hedonic discourse of veganism could motivate individuals to derive competencies, materials, and meanings from a plant-based diet.

H8: The presence of materials, competencies, and meanings positively influence an individual's intrinsic motivation to commence a plant-based diet, regardless of discourse.

2.8 Conclusion

Summarizing the findings of all papers concludes that although many factors could facilitate a transition to veganism, societal norms and stereotypes presented in the literature make it hard for people to engage with the idea and values of veganism. The biggest identified factor influencing people's perceptions of veganism is the type of discourse of veganism in the literature. An ascetic discourse of veganism leads omnivores to feel like they lack the information and abilities to source a nutritionally sound diet from plant-based ingredients thus creating general unattractiveness associated with the diet. Contrary to popular belief, research has found that vegans do eat a higher variety of foods and view their diet as an integral part of their identity. This information however is oftentimes disputed or ignored in modern literature. Due to this, it can be argued that the ascetic discourse strengthens the negative perceptions of omnivores regarding veganism. For an individual interested in commencing a vegan diet, this can lead to an increase in perceived pressure from the family and social circle.

The perceived pressures of the social circle oftentimes take the form of discrimination and stereotyping against vegans since omnivores use such tactics to effectively maintain face. Omnivores' need to maintain face stems from the fact that vegans often pose a symbolic threat to the values and beliefs of omnivore in-groups. An example of this is confronting omnivores with the meat paradox – the belief system omnivores engage in to justify their unethical eating patterns. The perceived symbolic threat raised by such confrontation leads omnivores to distance themselves from vegans and consequently brings about stereotypes, allowing omnivores to maintain face and minimize their cognitive dissonance. Ultimately, it can be hypothesized that the perceived pressures from family and an individual's social circle are strengthened by the ascetic discourse of veganism. This, in turn, may hinder an individual's internalization of values related to veganism which leads to lower intrinsic motivation to commence the vegan diet altogether.

The review of past research also found that despite the ascetic discourse and associated lack of social support, the presence of meanings, competencies, and materials can allow a shift in social practice and

ease the transition to a new diet. Individuals need access to the knowledge and capabilities needed for a plant-based diet to be successful. Material factors such as *new food exploration* or *taste* act as further motivators for a plant-based diet to become part of an individual's identity. Nonetheless, this shift in social practice can only be facilitated when an individual possesses the intrinsic motivation to engage in a dietary change.

Relating this to the central question of the paper, this study aims to find out how repositioning of the connotations of veganism could influence the likelihood of an individual to commence or continue a plant-based diet long-term. Based on the findings of past literature, I hypothesize that veganism could be perceived as a more inviting, easy, and fulfilling diet if advertised as a daring act of opportunity that fosters family well-being and contributes to a societal change serving a greater purpose. Further, I hypothesize that this change in discourse would decrease the extent to which omnivores discriminate against vegans, thus lowering the pressure plant-based interested individuals perceive from their family and social circle. The reduction in social pressure could thus facilitate an increase in intrinsic motivation to commence a vegan diet and even lead to the internalization of values related to a plant-based diet. Coupled with the presence of competencies, materials, and meanings related to veganism, a positive perception of veganism could ultimately lead to an increased likelihood to commence a plant-based diet.

2.9 Conceptual Framework

Based on the different factors influencing the transition to a plant-based diet; the following conceptual framework was developed.

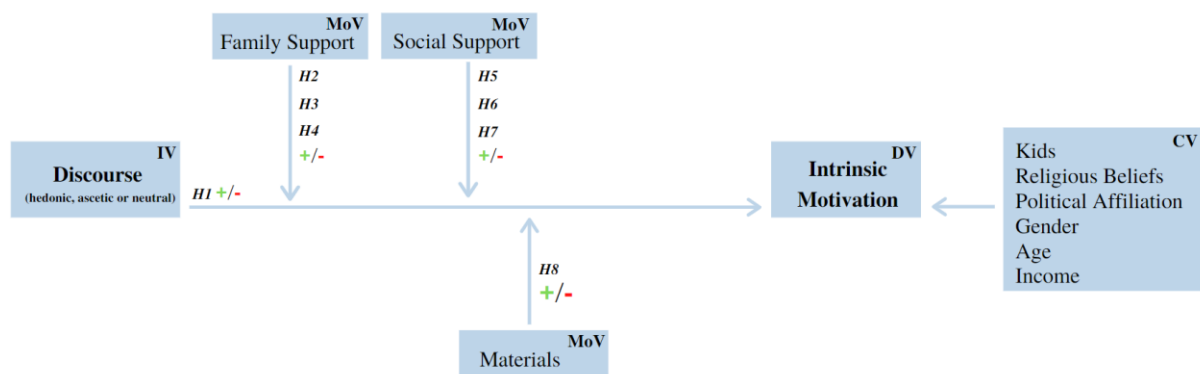


Figure 1: Conceptual Framework

In this conceptual framework, the type of discourse used to describe veganism marks the independent variable whereas an individual's intrinsic motivation to commence a plant-based diet is the dependent

variable. Furthermore, several moderating variables are included which are hypothesized to strengthen or weaken the relationship between the type of discourse and intrinsic motivation. An individual's degree of importance regarding social support and family support moderates the relationship between the type of discourse of veganism and an individual's intrinsic motivation to commence a plant-based diet. The presence or absence of meanings, materials, and competencies related to veganism also moderate the relationship between the type of discourse and an individual's intrinsic motivation to transition to a plant-based diet. Lastly, the demographic variables age, gender, income number of kids, religious beliefs, and political affiliation are added as control variables.

3. Methods

3.1 Introduction

To conduct my research, I created a quantitative online experiment in which I measured respondents' attitudes towards different types of discourses on a vegan diet. Besides respondents' attitudes, I also measured the extent to which respondents' attitudes towards vegan diets were influenced by their social support system and change enabling factors such as materials, meanings, and competencies. The online experiment was conducted using Qualtrics and MTurk. The market research tool Qualtrics was used to create the online survey and the other data collection tool MTurk was used to recruit participants. Respondents were rewarded for their participation in the online experiment after reading and agreeing to a confidentiality statement which ensured that their data was collected and used for the study only.

The research I conducted falls under the category of an online experiment. With the help of an online survey with three randomized treatment conditions, I made use of the independent measures experimental design. Hereby, respondents were randomly allocated to one of three treatment conditions. The two treatment conditions consisted of a description of veganism using either a hedonic or an ascetic discourse. In the control condition, a neutral description was used. Table 1 presents an outline of the variables included in the online experiment.

Variable	Description	Type	Measurement
Discourse	Either ascetic, hedonic or neutral statement about veganism	Treatment Condition (IV)	3-Level Categorical
Intrinsic Motivation	Measures the extent of intrinsic motivation to commence a plant-based diet an individual expresses	Dependent Variable (DV)	5-point Likert Scale
Family Influence	Measures the degree of importance of family support an individual needs to be intrinsically motivated	Control Variable, within-subjects variable	5-point Likert Scale
Social Circle Influence	Measures the degree of importance of social circle support an individual needs to be intrinsically motivated	Control Variable, within-subjects variable	5-point Likert Scale
Materials Influence	Measures the degree of importance of knowledge, skills, and ingredients an individual needs to be intrinsically motivated	Control Variable, within-subjects variable	5-point Likert Scale
Gender	Reflects the gender of the individual	Control Variable, within-subjects variable	3-Level Categorical
Age	Reflects the age of the individual	Control Variable, within-subjects variable	6-point Likert Scale
Income	Reflects the annual discretionary income of the individual	Control Variable, within-subjects variable	6-point Likert Scale
Kids	Reflects the number of kids of an individual	Control Variable, within-subjects variable	5-point Likert Scale
Political Affiliation	Reflects the political affiliation of an individual	Control Variable, within-subjects variable	5-Level Categorical
Religion	Reflects if the individual is religious or not	Control Variable, within-subjects variable	3-Level Categorical

Table 1: Overview of variables tested

3.2 Sample

To conduct my research, I collected 310 responses through my survey. The participants were recruited via the crowdsourcing tool MTurk and received a monetary reward of 0.40US\$ for filling out the survey. Furthermore, I distributed the survey in my social network. The survey itself was set up via the market research tool Qualtrics. Since I focus my research on the United States, I allowed only MTurk workers older than 18 and located within the United States to partake in the survey. Furthermore, MTurk workers had to have a HIT approval rating of 98% or higher to answer my survey to ensure a high-quality sample. The responses collected from my social network were not limited to the United States but since they make up merely ~9% of the responses, the sample is still representative of the target population.

After collecting the responses, I examined the quality of my sample. Firstly, I matched all the workerIDs of the MTurk respondents to their unique customer value through which they were able to redeem their payment on the Mturk platform. All MTurk workers that completed the survey entered the correct personalized custom value and therefore their responses were included in the final sample. Following this, I examined the responses that were exposed to the attention check during the survey. My attention check was mentioned after the treatment condition featuring the neutral discourse on veganism. The statement asked respondents to select the answer possibility “somewhat unimportant”. Furthermore, I removed 9 respondents' answers from my social network because some had only partially completed the survey or failed the attention check¹. I also removed 21 additional responses in which the respondent chose “Prefer not to say“ as an answer for demographic questions. This way, I avoided including variables in the model that had categories with very few observations. After excluding these responses, I report a final sample of 280 respondents. To further balance the categories among the demographic variables, I re-categorized some adjacent categories into one category. Table 2, Table 3, and Table 4 provide an overview of the variables as well as summary statistics for the final sample and the general population.

Variable	Levels with their respective values
Gender	1 = female, 2 = male
Age	2 = 0-40 years old, 3 = 40-60 years old, 4 = 60-80+ years old
Income	1 = Less than \$25,000, 2 = \$25,000 - \$50,000, 3 = \$50,000 - \$100,000, 4 = \$100,000 - \$200,000+
Kids	1 = No Kids, 2 = 1 Kid, 3= 2-4+ Kids
Religion	1= No, 2 = Yes
Political Affiliation	1 = Very Liberal, 2 = Slightly Liberal, 3 = Slightly Conservative, 4 = Very Conservative
Intrinsic Motivation	1 = Extremely unmotivated, 2 = Somewhat unmotivated, 3 = Neither motivated nor unmotivated, 4 = Somewhat motivated, 5 = Extremely motivated
Social Circle Influence	1 = Extremely unmotivated, 2 = Somewhat unmotivated, 3 = Neither motivated nor unmotivated, 4 = Somewhat motivated, 5 = Extremely motivated
Family Influence	1 = Extremely unmotivated, 2 = Somewhat unmotivated, 3 = Neither motivated nor unmotivated, 4 = Somewhat motivated, 5 = Extremely motivated
Materials Influence	1 = I would be more intrinsically motivated to commence a plant-based diet, 2 = My answer would not change, 3 = I would be less intrinsically motivated to commence a plant-based diet

Table 2: Overview of variables & respective values

Variable	Distribution of total Sample
Gender	Distribution of gender in Sample: 44% female, 56% male
Age	Mean age: 30 years old
Income	Mean household income: 50000\$USD – 100000\$USD
Kids	Mean number of children: 1 child

¹ Only 5.7% of respondents subjected to an attention check failed it, which suggests a good data reliability.

Religion	Distribution of religious affiliation in Sample: 64.6% religious, 35.4% not religious
Political Affiliation	Distribution of political affiliation in Sample: 16% very conservative, 28% slightly conservative, 33% slightly liberal, 23% very liberal

Table 3: Descriptive Statistics of Variables

Variable	Distribution of total US population
Gender	Distribution of gender in the US: 48.8% female, 51.1% male
Age	Mean age: 38.5 years old
Income	Mean household income: 65712\$USD per year
Kids	Mean number of children: 1.93 children
Religion	Distribution of religious affiliation in the US: 76.5% religious, 23.5% not religious
Political Affiliation	Distribution of political affiliation in US: 29% Conservatives, 35% Independents, 33% Democrats

Table 4: Overview of entire US population according to the US Census Bureau, Pew Research Center & Gallup

The sample is slightly dominated by men with ~56% male responses and ~44% female respondents (Figure A, Appendix I). Around 57% of respondents are between 0-40 years old whereas ~36% range between 40 and 60 years. Only ~7% of respondents indicate that they are 60-80+ years old (Figure B, Appendix I). Around 12% and 26% of respondents report an annual discretionary income of less than 25000US\$ or 25000US\$ - 50000US\$ respectively. 40% of respondents indicate an average yearly income of 50000US\$ - 100000US\$ and a residual 22% report earning 100000US\$ - 200000US\$+ per year (Figure C, Appendix I). Of all respondents, ~34% report no kids, ~28% have 1 kid and ~38% have 2-4+ kids (Figure D, Appendix I). Whereas ~65% of the sample reported being religious, ~35% stated that they do not hold religious beliefs (Figure E, Appendix I). The majority of the sample reports having a slight political affiliation to either liberalism or conservatism. Precisely, ~33% of respondents report being slightly liberal whereas 28% report being slightly conservative. Whereas ~23% of respondents indicate that they are very liberal, only ~16% report being very conservative (Figure F, Appendix I).

To summarize, respondents of the survey tend to be either male or female between 20 and 40 years of age, earn between 50000US\$ and 100000US\$ per year, report having either no kids or 2-4+ kids, hold religious beliefs, and have a slight political affiliation towards liberalism or conservatism.

3.3 Materials

Participation in the online survey took an average of 2 minutes and 10 seconds and respondents were compensated with 0.40US\$ for participating in the survey. Below is an overview of the types of variables tested in the online experiment. An exact overview of the survey questions and answer possibilities can be found in the appendix.

3.3.1 Demographics

Gender: The participants were asked to indicate their gender since past literature observed differences in attitudes towards a plant-based diet.

Age: Participants were asked to indicate what age range they fall under, as this can be an insightful factor regarding the general reluctance of an individual to embrace change.

Number of Kids: Participants were asked to indicate how many kids, if any, they had since this can have a strong influence on the decision to commence a plant-based diet. On the one hand, a parent might be more motivated to commence a diet that seems healthier for themselves and their kids. On the contrary, having kids might make it difficult for the parent to adjust to the new diet if the kids rely on the parent to prepare the meals.

Income: The income of participants is a useful variable as a higher income allows for more flexibility regarding the food choices an individual can make. An individual might be more motivated to commence a plant-based diet if they have a higher discretionary income since this would allow them to order food more often instead of having to prepare it themselves.

Political Affiliation: Participants of the survey experiment were asked to indicate their political affiliation. Past literature found differences in the openness to learn about and accept veganism within an individual's social circle based on the individuals' political stance. More conservative individuals, especially men, were found to be less open to accepting the philosophy of a plant-based diet (MacInnis & Hodson, 2017).

Religion: Lastly, participants were asked to indicate if they are religious or not. A religious person is more likely to stick to morals and deal better with “abstaining” from eating animal products. Hence this variable was included in the survey.

3.3.2 Discourse on Veganism

The discourse on veganism marks the independent variable of the online experiment. Within a short paragraph, the plant-based diet is defined either in a hedonic, ascetic, or neutral style. Participants are asked to read through the statement and consequently answer questions related to it.

1. Ascetic Discourse on a vegan diet: The statement describing a plant-based diet in an ascetic way includes words such as “omit” and “exclude”. It highlights the exclusion of animal products such as meat, fish, and dairy and motivates the choice to eat plant-based due to ethical reasons. The statement using an ascetic discourse of a vegan diet attempts to depict this diet the way it is seen traditionally - as a restrictive practice.

A vegan diet is a diet that omits all animal-sourced ingredients including meat, fish, dairy, and eggs. This type of diet stems from veganism - a philosophy and diet that seeks to exclude all forms of animal-sourced food, clothing, and products serving another purpose for the benefit of animals, humans, and the environment. A big reason for individuals to commence a vegan diet is the desire to reduce animal exploitation. Furthermore, self-defined vegans report a more pleasurable eating experience due to the reduction in guilt that comes with sourcing plant-based ingredients and reducing environmental emissions. After all, life is about human progress and learning - hence reducing the suffering of animals by adopting a vegan diet is an eye-opening experience anyone should get the chance to try.

2. Hedonic Discourse on a vegan diet: Contrary to the statement including the ascetic discourse of a vegan diet, the hedonic statement highlights the personal gains perceived from eating plant based. Negating words such as “omit” or “excluded” are replaced to highlight the abundance of plant-based foods an individual can consume after transitioning to a vegan diet. Furthermore, emphasis is placed on the satisfaction self-reported vegans experience by engaging in a healthier, more abundant diet. To sum up, the hedonic statement attempts to depict a vegan diet in a new light - as an opportunity to embrace change.

A vegan diet is a diet that consists of all plant-sourced ingredients including vegetables, legumes, grains, nuts, and seeds. This type of diet stems from veganism - a philosophy and diet that seeks to use all forms of plant-sourced food, clothing, and products serving another purpose for the benefit of animals, humans, and the environment. A big reason for individuals to commence a vegan diet is the health benefits associated with it. Furthermore, self-defined vegans report a more pleasurable eating experience due to the increased variety of food that is consumed and the satisfaction that comes with discovering new tastes. After all, life is about embracing change and societal progress - hence reaping the benefits of a vegan diet is an eye-opening experience anyone should get the chance to try.

3. Neutral Discourse on a vegan diet: Lastly, a statement including a neutral discourse of a vegan diet was included to compare the differences in effect each statement has on respondents. The statement using neutral discourse defines veganism using both ascetic and hedonic words. Specific motivations of individuals to commence a plant-based diet were not included.

A vegan diet is a diet that consists of all plant-sourced ingredients including vegetables, legumes, grains, nuts, and seeds, and omits all animal-sourced ingredients including meat, fish, dairy, and eggs. This type of diet stems from veganism - a philosophy and diet that seeks to exclude all forms of animal-sourced food, clothing, and products serving another purpose for the benefit of animals, humans, and the environment. Reasons for individuals to commence a vegan diet range from a personal desire to reduce animal exploitation, to increase environmental protection efforts, or to reap the personal health benefits associated with the diet.

3.3.3 Intrinsic Motivation

A participant's intrinsic motivation is the dependent variable of the online experiment. The survey asked the respondent to indicate how likely they are to commence a vegan diet based on the ascetic, hedonic or neutral statement of a vegan diet provided.

3.3.4 Perceived Social/Family Support

This variable measures how much the perceived support from an individual's social circle or family affected the individual's intrinsic motivation to commence a vegan diet. After reading the ascetic, hedonic or neutral statement, participants were asked how much their intrinsic motivation to commence a vegan diet would change if the support from their family or social network would be absent.

3.3.5 Meanings, Materials & Competencies

This variable measures how much the presence of meanings, materials, and competencies would influence an individual's intrinsic motivation to commence a vegan diet. Past literature evaluated these three components as practical facilitators for social change (Spurling & McMeekin, 2013) which is why they were included in this research.

3.4 Procedure

Participants were able to participate in the study by signing up on MTurk as a worker. MTurk allows researchers to collect representative data by providing the option to workers to fill out a survey in return for a small payment (MTurk, 2021). The MTurk environment showed workers the amount of money they would receive by partaking in the study, as well as the time required to fill out the survey. MTurk also provided insights into how many days it would take for participants to get remunerated. To ensure consent, the description of the survey entailed the following statement: *“By participating in this survey, you agree for the requester to use all of your provided data for his/her research only.”* In the first part of the survey, participants are asked to answer demographic questions related to their gender, age, income, family status, religious beliefs, and political affiliation. Following this, respondents are asked to read through a statement describing the vegan diet. This statement is the variable that is manipulated, so each participant will be randomly assigned to one of the three treatment conditions. The statement will either follow an ascetic discourse of veganism, a hedonic discourse of veganism, or a neutral discourse of veganism. After reading through the statement, participants are asked to answer questions related to the statement. First of all, respondents are asked how intrinsically motivated they are to commence a plant-based diet based on the statement they read. Subsequently, respondents are asked how intrinsically motivated they are to commence a plant-based diet given a lack of support from their social circle. Then, respondents are asked how their intrinsic motivation to commence a plant-based diet would be affected if no family support would be given. Lastly, respondents are asked how the

presence of materials, meanings, and competencies related to veganism would influence their intrinsic motivation to commence a plant-based diet.

After completing the survey, participants were thanked for participating in the survey and a validation code for MTurk was provided. This code was randomized and uniquely generated for every survey participant. With the help of this code, participants were able to retrieve their payment for participation in the study. Lastly, participants were informed that their responses were recorded.

3.5 Analysis

3.5.1 Randomization Test

After collecting the responses, I generated the first set of descriptive statistics to get an overview of the respondent's answers per question. Table 5 provides a comparison of the means and standard deviations of demographic variables for each treatment condition sample and the corresponding t-test values. None of the t-tests between the three groups means per variable show a statistically significant difference at the 95% confidence level, hence the randomization of the treatment effect was effective.

Variable	Sample	Mean	SD	T-Test Result
Gender	Hedonic	1.538	0.501	hedonic & neutral: T = -1.0358, p-value = 0.3017
	Ascetic	1.532	0.502	ascetic & hedonic: T = 0.0780, p-value = 0.9379
	Neutral	1.613	0.490	neutral & ascetic: T = 1.117, p-value = 0.2654
Age	Hedonic	1.527	0.653	hedonic & neutral: T = 0.3413, p-value = 0.7333
	Ascetic	1.479	0.600	ascetic & hedonic: T = 0.5252, p-value = 0.6001
	Neutral	1.495	0.636	neutral & ascetic: T = 0.1758, p-value = 0.8606
Income	Hedonic	2.753	0.905	hedonic & neutral: T = 0.4729, p-value = 0.6369
	Ascetic	2.798	0.934	ascetic & hedonic: T = -0.3360, p-value = 0.7373
	Neutral	2.688	0.955	neutral & ascetic: T = -0.7938, p-value = 0.4283
Kids	Hedonic	2.032	0.853	hedonic & neutral: T = -0.2611, p-value = 0.7942
	Ascetic	2.021	0.880	ascetic & hedonic: T = 0.0867, p-value = 0.931
	Neutral	2.065	0.832	neutral & ascetic: T = 0.3455, p-value = 0.7301
Religion	Hedonic	1.688	0.466	hedonic & neutral: T = 0.7717, p-value = 0.4413
	Ascetic	1.617	0.489	ascetic & hedonic: T = 1.0192, p-value = 0.3094
	Neutral	1.634	0.484	neutral & ascetic: T = 0.2444, p-value = 0.8072
Political Affiliation	Hedonic	2.387	1.043	hedonic & neutral: T = -0.3580, p-value = 0.7208
	Ascetic	2.330	0.988	ascetic & hedonic: T = 0.3857, p-value = 0.7002
	Neutral	2.441	1.010	neutral & ascetic: T = 0.7621, p-value = 0.4470

Table 5: Balanced test of pre-treatment variables table

The question “*After reading this statement, how intrinsically motivated are you to try out a plant-based diet?*” was posed to every single respondent regardless of the statement that respondents were exposed to initially. 50% of respondents indicated that they are “*somewhat motivated*” to try out a plant-based diet and ~16% of respondents were “*extremely motivated*” to try out a plant-based diet. Only 11% of respondents were “*extremely unmotivated*” to try out a plant-based diet. Only ~12% and 11% of respondents were “*neither motivated nor unmotivated*” or “*somewhat unmotivated*” respectively (Figure G, Appendix I). The next question in the survey investigated the extent of motivation of the respondents to commence a plant-based diet when social support from their network is not guaranteed. Despite the lacking support, ~39% of respondents remain “*somewhat motivated*” to commence a plant-based diet and ~12% of respondents remain “*extremely motivated*”. The number of “*extremely unmotivated*” respondents increased to ~13%, whereas 23% and 13% of respondents reported being “*neither motivated nor unmotivated*” or “*somewhat unmotivated*” respectively (Figure H, Appendix I). Furthermore, respondents were asked to indicate how motivated they would be if their family would not support a transition to a plant-based diet. The answers indicate that 38% of responses would be “*somewhat motivated*” to commence a plant-based diet whereas 12% would be “*extremely motivated*” to commence a plant-based diet. The amount of “*extremely unmotivated*” respondents was ~14% which is only slightly higher compared to the previous distribution. Individuals that reported being “*neither motivated nor unmotivated*” or “*somewhat unmotivated*” ranged between 20% and 16% respectively (Figure I, Appendix I). The last question measured how the presence of ingredients, knowledge, and skills related to a plant-based diet affects an individual’s intrinsic motivation to commence a plant-based diet. Of all respondents, ~61% would be more intrinsically motivated, ~37% report no change to their intrinsic motivation, and only 2% would be less motivated if given the ingredients, knowledge, and skills related to a plant-based diet (Figure J, Appendix I).

To summarize, these first descriptive statistics show that respondents tend to be “*somewhat motivated*” to commence a plant-based diet, but this intrinsic motivation seems to slightly decline if support from an individual’s social circle or family is not granted. On the other hand, the majority of respondents would be more intrinsically motivated if they would be given the ingredients, knowledge, and skills needed to succeed in a plant-based diet. What is also interesting is the fact that the number of respondents being indifferent towards commencing a plant-based diet increased from ~12% to ~23% and ~20% when either no social support or family support was provided. By investigating how each type of discourse individually affects these answers, more insights regarding the effectiveness of different discourses in motivating individuals to commence a plant-based diet can be derived.

3.5.2 Ordinal Logistic Regression

Following the descriptive statistics, the data were tested for linearity using an ordinary least squares regression (Table A, Appendix I). Since this regression found significant linear relationships between

some of the variables included in the model, the data were further analysed using ordinal logistic regression. Ordinal logistic regression is an extension of the logistic regression algorithm that can deliver superior insights by taking into account the order of categorical variables and their effects on the dependent variable (Campbell & Donner, 1989). By using ordinal logistic regression and taking into account the order of the categorical data, further potential hidden underlying structures within the dataset can be visualized. Furthermore, being able to measure interaction effects per variable category is another advantage to use this algorithm.

The ordinal logarithmic regression algorithm includes the following components:

(1) Y is defined as a variable with J categories.

(2) The cumulative probability of Y being less than or equal to a specific category J can be denoted as

$$P(Y \leq j).$$

(3) Using this denotation, the odds of Y being less than or equal to a specific category J can be calculated

using the formula:
$$\frac{P(Y \leq j)}{P(Y > j)}$$

The corresponding log odds ratio marks the probability of success divided by the probability of failure

(Bilder & Loughin, 2014).
$$\log \frac{P(Y \leq j)}{P(Y > j)} = \text{logit}(P(Y \leq j)).$$

(4) The ordinal logistic regression model is defined as:

$$\text{logit}(P(Y \leq j)) = \beta_{j0} + \beta_{j1}x_1 + \dots + \beta_{jp}x_p$$

Hereby, β_{jp} marks the model coefficients with P predictors for each of the J categories. In R Studio,

this denotation is defined as:
$$\text{logit}(P(Y \leq j)) = \beta_{j0} - \eta_1x_1 - \dots - \eta_px_p$$

The only difference is that $\eta_i = -\beta_i$.

Let's assume that there is one binary predictor P with two categories 1 (hedonic discourse (HD)) and 0 (ascetic discourse (AD)). The ordinal dependent variable is the degree of intrinsic motivation to commence a plant-based diet with the ordinal levels J high motivation (HM), medium motivation (MM), and low motivation (LM). After loading the *foreign* and *MASS* package in R studio the *polr* function calculates the coefficients for P and intercepts for J of this simple model.

$$\begin{aligned} \text{logit}(P(Y \leq 1)) &= \text{Intercept HM} | \text{MM} - \text{Coefficient } P \\ \text{logit}(P(Y \leq 2)) &= \text{Intercept MM} | \text{LM} - \text{Coefficient } P \end{aligned}$$

Hereby, Coefficient P is equal to η_i which is the difference in log odds of being highly motivated to commence a vegan diet (versus medium motivation or low motivation) when a survey participant is exposed to a hedonic discourse of a vegan diet as opposed to an ascetic discourse on a vegan diet.

$$\text{logit}(P(Y \leq HM)|x_1 = HD) - \text{logit}(P(Y \leq HM)|x_1 = AD) = -\eta_1$$

Ordinal logistic regression makes use of several assumptions. These include that the dependent variable is ordered, the independent variables are continuous, categorical, or ordinal, there is no presence of multicollinearity and that odds are proportional (Liao, 1994).

4. Results

The following section discusses the results found in the ordinal logistic regression and how these relate to the hypothesis testing different factors influencing an individual's intrinsic motivation to commence veganism.

4.1 Models

To find potential underlying structures between the variables obtained through the online survey, the four models were estimated using ordinal logistic regression.

Model1:

```
Model1 <- polr(Intrinsic_Motivation ~ Discourse + Family_Influence + Social_Circle_Influence +
Materials_Influence , data = final_data2, Hess = TRUE)
```

Model2:

```
Model2 <- polr(Intrinsic_Motivation ~ Discourse + Family_Influence + Social_Circle_Influence +
Materials_Influence + Discourse*Family_Influence + Discourse*Social_Circle_Influence, data =
final_data2, Hess = TRUE)
```

Model3:

```
Model3 <- polr(Intrinsic_Motivation ~ Discourse + Family_Influence + Social_Circle_Influence
+ Materials_Influence + Discourse*Family_Influence + Discourse*Social_Circle_Influence + Age +
Gender + Income + Kids + Religion + Political_Affiliation, data = final_data2, Hess = TRUE)
```

Model4:

```
Model4 <- polr(Intrinsic_Motivation ~ Discourse + Family_Influence + Social_Circle_Influence +
Materials_Influence + Discourse*Family_Influence + Discourse*Social_Circle_Influence + Age +
Gender + Income + Kids + Religion + Political_Affiliation + Discourse*Age + Discourse*Income +
Discourse*Gender + Discourse*Kids + Discourse*Religion + Discourse*Political_Affiliation +
Discourse*Materials_Influence, data = final_data2, Hess = TRUE)
```


Model 1 included only the focal variables *Discourse*, *Family_Influence*, *Social_Circle_Influence*, and *Materials_Influence* and reports an R^2 of 0.655 (Table B, Appendix I). This means that the variables included in the model explained 65.5% of the variation in the model. Model 2 also included two interaction effects related to the focal variables which increased the R^2 to 0.657 (Table B, Appendix I). Model 3 included further control variables such as *Age*, *Gender*, *Income*, *Kids*, *Religion*, and *Political_Affiliation* which resulted in an R^2 of 0.673 (Table B, Appendix I). Lastly, Model 4 included the previously stated variables and interactions as well as further interaction effects between the control variables and *Discourse*. The interactions included in Model 4 were tested using a Lasso regression. This Lasso regression showed that none of the added interactions of control variables and *Discourse* had a value > 0 which is also reflected in the insignificant coefficients of these interactions in Model 4. An ANOVA test of Model 3 and Model 4 revealed that the models do not differ significantly at the 95% confidence level which is why the simpler Model 3 was chosen as the final model (Table B, Appendix I). Table 6 provides an overview of the variables included in the testing of each hypothesis.

Hypothesis	Relationship	Outcome
H1	Intrinsic Motivation ~ Discourse	Inconclusive
H2	Intrinsic Motivation ~ Family Influence	Inconclusive
H3	Intrinsic Motivation ~ Discourse + Family Influence + Discourse*Family Influence (hedonic)	Inconclusive
H4	Intrinsic Motivation ~ Discourse + Family Influence + Discourse*Family Influence (ascetic)	Inconclusive
H5	Intrinsic Motivation ~ Social Circle Influence	Rejected
H6	Intrinsic Motivation ~ Discourse + Social Circle Influence + Discourse*Social Circle Influence	Inconclusive
H7	Intrinsic Motivation ~ Discourse + Social Circle Influence + Discourse*Social Circle Influence	Inconclusive
H8	Intrinsic motivation ~ Materials Influence	Accepted

Table 6: Overview of hypotheses

4.2 Intrinsic motivation and type of discourse

Hypothesis 1 investigates if different types of discourses of a vegan diet influence an individual's intrinsic motivation to commence a plant-based diet. To investigate this relationship, respondents were randomly assigned either a neutral, ascetic, or hedonic discourse relating to a vegan diet. The results of the ordinal logistic regression indicate that there is no significant difference at the 95% confidence level in the degree of intrinsic motivation expressed by participants after being exposed to one of the three types of discourses. In other words, the results of the model show that the intrinsic motivation of a survey respondent is not affected by the type of discourse being used to introduce the diet. The lack of evidence leads to a failure to reject the null hypothesis and therefore the outcome of Hypothesis 1 is inconclusive.

4.3 Intrinsic motivation and family influence

Hypothesis 2, Hypothesis 3, and Hypothesis 4 investigate what influence a respondent's family plays in determining the extent of intrinsic motivation that this individual has to commence a plant-based diet. More specifically, Hypothesis 2 argues that family support influences an individual's intrinsic motivation to commence a plant-based diet regardless of the discourse used. Originally, the answer possibilities for the intrinsic motivation despite lacking family support were coded as 1 = "extremely unmotivated", 2 = "somewhat unmotivated", 3 = "indifferent/no opinion", 4 = "somewhat motivated" and 5 = "extremely motivated". To aid the interpretation process we will assume the following labels instead: 1 = "family support is important for intrinsic motivation", 2 = "family support is somewhat important for intrinsic motivation", 3 = "I am indifferent regarding social support for intrinsic motivation", 4 = "family support is somewhat unimportant for intrinsic motivation" and 5 = "family support is unimportant for intrinsic motivation". The results of the model show that at the 95% confidence level, there is no significant difference between the degree of importance perceived by individuals and their intrinsic motivation to commence a plant-based diet. The lack of evidence fails to reject the null hypothesis and therefore the outcome of Hypothesis 2 is inconclusive.

Hypothesis 3 on the other hand, argues that when exposed to the hedonic discourse, the degree of family support that the individual experiences diminish in importance. Lastly, Hypothesis 4 argues that the ascetic discourse of a vegan diet increases the need for family support that individuals require to be intrinsically motivated to commence a plant-based diet. At the 95% confidence level, Model 3 shows no significant effect of the interaction of hedonic discourse and family support on intrinsic motivation to commence a plant-based diet. Based on these findings, the null hypothesis cannot be rejected and Hypothesis 3 is left inconclusive. Similarly, no statistically significant effect can be found at the 95% confidence level for the interaction of ascetic discourse and family support on an individual's intrinsic motivation to commence a plant-based diet. This finding leads to a failure to reject the null hypothesis and leaves Hypothesis 4 inconclusive.

4.4 Intrinsic motivation and social circle influence

Hypothesis 5 investigates the influence of an individual's social circle on his or her intrinsic motivation to commence a plant-based diet. Originally, the answer possibilities for the intrinsic motivation despite lacking social circle influence were coded as 1 = "extremely motivated", 2 = "somewhat motivated", 3 = "indifferent/no opinion", 4 = "somewhat unmotivated" and 5 = "extremely unmotivated". To aid the interpretation process we will assume the following labels instead: 1 = "social support is important for intrinsic motivation", 2 = "social support is somewhat important for intrinsic motivation", 3 = "I am indifferent regarding social support for intrinsic motivation", 4 = "social support is somewhat unimportant for intrinsic motivation" and 5 = "social support is unimportant for intrinsic motivation". The model presents interesting findings regarding the relationship between intrinsic motivation and

social support. For a one-unit increase in social circle influence, the odds of changing an individual from being “extremely unmotivated“ to “somewhat unmotivated“, “neither motivated nor unmotivated“, “somewhat motivated“ or “extremely motivated“ are 0.26 times lower at the 95% confidence level and holding everything else constant. This odds ratio implies that the more value an individual attributes to the support of his or her social circle, the lower the odds are that this individual will be intrinsically “extremely motivated“ to commence a plant-based diet. Given these findings, Hypothesis 5 is rejected.

Hypothesis 6 investigates the effect of hedonic discourse on the influence that an individual's social circle support has on determining an intrinsic motivation to commence a plant-based diet. Similarly, Hypothesis 7 investigates what effect an ascetic discourse has on the relationship between social circle support and an individual's motivation to commence a plant-based diet. The results of the model show no statistically significant difference at the 95% confidence level for either one of the two hypotheses. Therefore it can be concluded that the type of discourse used does not alter the effect that social support has on an individual's intrinsic motivation to commence a plant-based diet. Based on the results of the analysis, the null hypotheses for both Hypothesis 6 and Hypothesis 7 cannot be rejected which leads to inconclusive results for both Hypothesis 6 and Hypothesis 7.

4.5 Intrinsic motivation and materials influence

Hypothesis 8 investigates to what extent the presence of ingredients, knowledge, and skills influences an individual's intrinsic motivation to commence a plant-based diet, regardless of discourse. Originally the answers for the question on the importance of materials were coded as 1 = “I would be more intrinsically motivated to commence a plant-based diet“, 2 = “My answer would not change“ and 3 = “I would be less intrinsically motivated to commence a plant-based diet“. To make the results of the model easier to interpret the answer possibilities are referred to 1 = “Materials help me to be intrinsically motivated“, 2 = “I am indifferent regarding materials to be intrinsically motivated“ and 3 = “Materials don't help me to be intrinsically motivated“. The results imply that for a one-unit increase in materials influence, the odds of changing an individual from being “extremely unmotivated“ to “somewhat unmotivated“, “neither motivated nor unmotivated“, “somewhat motivated“ or “extremely motivated“ are 0.20 times lower at the 95% confidence level and holding everything else constant. It can be concluded that the less an individual attributes value to the presence of materials, the less intrinsically motivated this individual will be to commence a plant-based diet. Based on these findings, Hypothesis 8 is accepted.

4.6 Other findings

The results of the analysis presented one additional significant finding related to an individual's political affiliation. For a one-unit increase in political affiliation, implying a tendency towards conservatism, the odds of changing an individual from being “extremely unmotivated“ to “somewhat unmotivated“, “neither motivated nor unmotivated“, “somewhat motivated“ or “extremely motivated“ are 1.42 times higher at the 95% confidence level and holding everything else constant. This implies that the more conservative individuals get, the higher the likelihood that they will be „extremely intrinsically“ motivated to commence a plant-based diet.

Looking at Model 4, there is one last finding that provides interesting insights. Although only significant at the 90% confidence level and holding everything else constant, for a one-unit increase in an individual's annual discretionary income the odds of changing an individual from being “extremely unmotivated“ to “somewhat unmotivated“, “neither motivated nor unmotivated“, “somewhat motivated“ or “extremely motivated“ are 1.89 times higher when exposed to the hedonic discourse instead of the ascetic discourse. Though this relationship only portrays a low significance, this finding implies that individuals with higher discretionary annual income are more likely to be „extremely intrinsically motivated“ when being exposed to a hedonic discourse that does not include words of omission to describe a vegan diet.

4.7 Diagnostics

To test the assumptions of ordinal logistic regression, two tests were conducted. Firstly, the presence of multicollinearity was tested by constructing a correlation matrix (Figure 2). The matrix revealed that a moderately strong positive correlation of 0.7730 exists between the variables *Social_Circle_Influence* and *Family_Influence*. Furthermore, moderate positive correlations of 0.7483 and 0.6691 exist between the variables *Intrinsic_Motivation* and *Social_Circle_Influence* as well as *Intrinsic_Motivation* and *Family_Influence*. The model, therefore, is subject to moderate multicollinearity between the variables *Intrinsic_Motivation*, *Social_Circle_Influence*, and *Family_Influence*. A reason for this could be how the survey questions were phrased since the questions regarding *Social_Circle_Influence* and *Family_Influence* directly relate to the extent of *Intrinsic_Motivation* an individual experiences. To test if multicollinearity affects the model, the variance inflation factor (VIF) for each variable was calculated. As a rule of thumb, a $VIF > 10$ is a sign of multicollinearity within the model. Table 8 provides an overview of each variable's VIF. It can be seen from the table that no multicollinearity within the model was detected and hence all variables were included in the model.

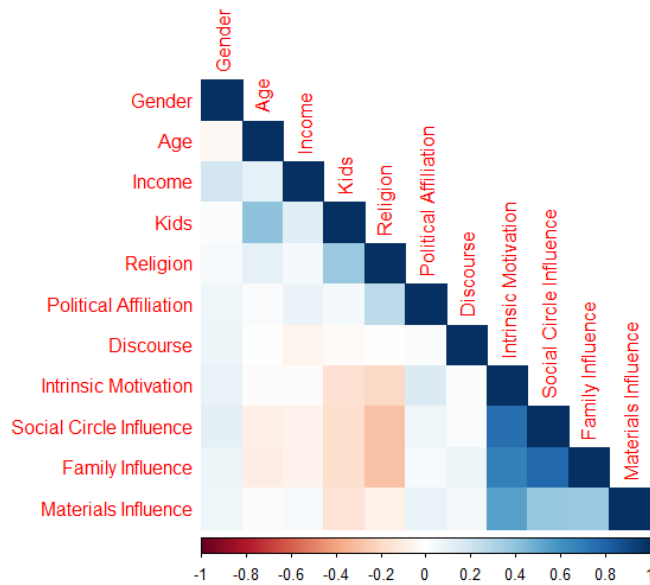


Figure 2: Correlational Matrix

The proportional odds assumption tests whether the effects of an independent variable on the dependent variable are of similar size across all the categories of the independent variable (Liao, 1994). To test for this, a table was constructed that lists the coefficients of a single predictor logistic regression. In simpler terms, the table provides an overview of the coefficients of each independent variable category and one dependent variable category. For the proportional odds assumption to hold, the differences in coefficients between two adjacent categories should be of similar size compared to other adjacent categories of the same variables. This is further summarized in Figure 3. It is visible that the proportional odds assumption does not hold for any of the variables except for the variables. This means that the effect between two adjacent categories of an independent variable is different from the effect of two other adjacent categories of the same independent variable.

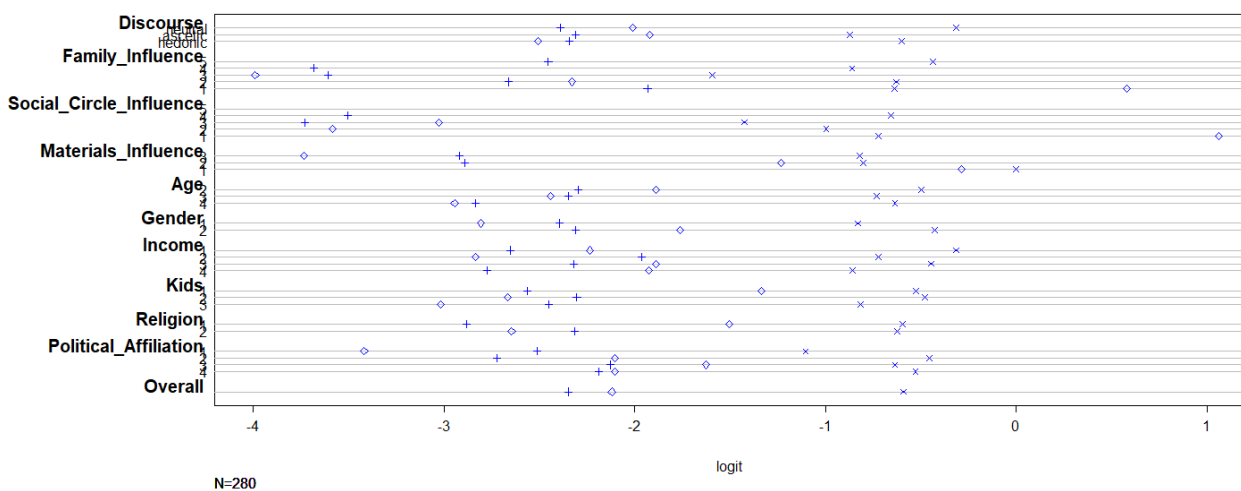


Figure 3: Graph related to the proportional odds assumption

5. Discussion

This research paper investigated to what extent differences in the discourse on a vegan diet can intrinsically motivate an individual to commence a plant-based diet. Besides the discourse used, external factors such as demographics, family, and social circle support as well as the presence of knowledge, ingredients, and skills related to veganism were also included in the research to identify possible interactions between these factors.

5.1 Main results

The results of the model featured several findings. The first conclusion that could be drawn from the model is that the discourse used to portray veganism in isolation has no significant effect on the intrinsic motivation an individual has to commence a plant-based diet. Secondly, the results of the model also show no relationship between the degree of perceived importance of family support and “extreme intrinsic motivation“ to commence a plant-based diet alone. Furthermore, hedonic discourse and ascetic discourse both do not evoke a significant relationship at the 95% confidence level when taking into account an individual's degree of importance regarding family support. Moving onto social support, the model reveals that there is a negative relationship between the degree of perceived importance of social support and “extreme intrinsic motivation“ to commence a plant-based diet. The type of discourse used, however, does not influence the degree of social support needed by an individual to be “extremely intrinsically motivated“ to commence a plant-based diet. Relating to the importance of materials, the results of the model revealed that there is a positive relationship between the perceived degree of importance of materials by an individual and higher intrinsic motivation to commence a plant-based diet. Lastly, the model also revealed one further finding that was not tested in the hypotheses. Opposed to liberal individuals, more conservative individuals are more likely to be “extremely intrinsically motivated“ to commence a plant-based diet. Model 4 revealed a finding that was only significant at the 90% confidence level and presented a positive link between annual discretionary income and intrinsic motivation when exposed to a hedonic discourse.

5.2 Link to literature

5.2.1 Intrinsic motivation and discourse

The finding related to Hypothesis 1 are inconclusive regarding past literature. In his study, Cole (2008) explains that vegans report an increasingly diverse consumption of food, better health, a more nutritionally sound diet, and an overall hedonic sensitivity to food. These facts have not been highlighted in recent discourses on a vegan diet and hence Cole (2008) argues that this lack of sufficient attention hinders the emergence of positive intentions towards veganism. In the author's point of view,

ascetic discourse used in recent literature leads to a less favourable perception of the diet due to ascetic terms such as “omission“, “avoidance“ or “restriction” (Cole, 2008). Looking at the results of my study it has become evident that individuals do not perceive veganism differently when the personal benefits associated with the diet are mentioned. Whereas the ascetic discourse made use of ascetic words and merely highlighted benefits associated with animal welfare, the hedonic discourse used hedonic words and focussed on motivating individuals purely based on personal gain. Since no significant difference in intrinsic motivation can be found when using different types of discourses, there seem to be other factors that play into being intrinsically motivated. This is also highlighted by the significant interaction effects *Discourse*Family_Influence*, *Discourse*Age* and *Discourse*Income* which will be discussed in later sections.

5.2.2 Intrinsic motivation and family influence

My study found no relationship between the degree of perceived importance of family support and intrinsic motivation to commence a plant-based diet. In her study, author Chwiałkowska (2018) found that the value system of a family strongly influences an individual's internalization process which ultimately leads to intrinsic motivation. Furthermore, Sobal & Hanson (2014) investigated the effect of families on food settings and found high internal pressures to share meals regularly within a family environment. This acts as a barrier for a transition to veganism since the decision to eat a plant-based diet needs to be shared by all family members to be adopted without resistance. Based on this, one would hypothesize that an increase in family support regarding a plant-based diet would motivate individuals more intrinsically. Nonetheless, the model revealed no significant difference between the degree of importance of family support and intrinsic motivation to commence a plant-based diet. Perhaps, individuals that participated in the survey perceived the support from their family as present, regardless of dietary choice. This would lead to general indifference towards the degree of family support to determine intrinsic motivation to commence a plant-based diet. Furthermore, the mean age range of the collected sample is “20-40 years old“ which provides a further reason as to why individuals of the sample do not rely on the degree of family support for intrinsic motivation. Perhaps, respondents do not live at home anymore or are, in Chwiałkowska’s words, the “dietary gatekeeper“ of the family (Chwiałkowska, 2018). In the latter scenario, the individual would be less reliant on the support from family members as the individuals’ choice of a dietary transition as “dietary gatekeeper“ directly impacts the family.

Hypothesis 3 and Hypothesis 4 further build on the past literature of Cole (2008), Chwiałkowska (2018), and Sobal & Hanson (2014). Since Cole (2008) argued that a focus on hedonic discourse, instead of ascetic discourse, would make a vegan diet seem more attractive, it could be hypothesized that by repositioning the diet in a more positive light either the individual would be more motivated to

commence a plant-based diet, or their family would be more open to accepting the individuals' dietary transition. In the former scenario, the individual might be less dependent on the family support to be intrinsically motivated to transition to a plant-based diet. In the latter case, the family might perceive veganism favorably and hence be more motivated to transition together with the individual. The outcome of Hypothesis 3 does not support the hypothesized findings and concludes that hedonic discourse in interaction with family support does not influence intrinsic motivation. This finding is therefore not in line with past literature. Similarly, Hypothesis 4 was inconclusive since no significant differences in intrinsic motivation could be found in individuals' responses when being exposed to ascetic discourse in interaction with family support. Hence, this finding also contradicts the findings of past literature. The lack of relationship between the type of discourse and family support on intrinsic motivation implies, that individuals do not depend on their family's support and that the type of discourse does not influence this lack of relationship further. A reason for this lack of relationship could be that the majority of respondents reported being “somewhat motivated“ to commence a plant-based diet regardless of the discourse they were exposed to (Figure I, Appendix I). This could imply that individuals source their motivation from a variety of reasons and benefits related to veganism including animal welfare and environmental protection mentioned in the ascetic discourse or other personal reasons not mentioned in either discourse. A recent study conducted by Kaminski et al. (2020), found that veganism gained in popularity over the past decade and attracts the largest public interest globally of all diets. This dietary trend could be a reason why individuals might be more open to being motivated to try out a plant-based diet, no matter what benefits are being associated with it.

5.2.3 Intrinsic motivation and social circle influence

Hypothesis 5, 6, and 7 investigated the influence of social circle support on an individual's intrinsic motivation to commence a plant-based diet. The findings of Model 3 rejected Hypothesis 5 and stated that the higher the degree of importance of social circle support is for an individual, the lower the odds are that this individual will be intrinsically “extremely motivated“ to commence a plant-based diet. Past literature highlighted the symbolic threats perceived by omnivores and consequential stigmatization and discrimination of vegans resulting from vegans' advocacy for the plant-based diet (Markowski and Roxburgh, 2019). This would give rise to the assumption that if an individual's in-group is supportive of a plant-based diet, regardless of their diet, an individual would be more intrinsically motivated to commence a plant-based diet themselves. Nonetheless, the results of my study showed that the less an individual cares about social support, the higher the intrinsic motivation will be for this individual to commence a plant-based diet. These findings do not suggest that an individual does not want to be supported by their in-group. Rather it raises the assumption that the intrinsic motivation of an individual is less dependent on external factors. This again is motivated by the findings of Kaminski et al. (2020)

which concludes that the rise of veganism in recent years decreased the extent of discrimination and stigmatization.

Hypothesis 6 and 7 focussed on the interaction of *Discourse* and *Social_Circle_Influence*. Whereas Hypothesis 6 argued that a hedonic discourse decreases the need for social support to be “extremely intrinsically motivated“ to commence a plant-based diet, Hypothesis 7 stated that ascetic discourse would increase the need for social support. These hypotheses arose from previous research from Markowski and Roxburgh (2019), who found that vegans motivated by animal rights were evaluated most negatively, followed by vegans motivated for environmental reasons, and lastly, vegans motivated by the health benefits of a vegan diet. Hypothesis 6 was inconclusive and hence does not reflect the findings in the literature. Past literature on intergroup threat found that individual’s value social support and this social support appears to be stronger when motivations to commence a plant-based diet evolve around personal health benefits (Rios, Sosa & Osborne, 2018). By motivating to commence a plant-based diet due to health benefits, omnivores might perceive less threat from a motivated individual and are hence more supportive of the dietary change. Since the findings are inconclusive, it could be suggested that veganism has gained more acceptance by omnivores in recent years despite the risk of intergroup threat. Recent literature found that omnivore individuals value veganism positively in terms of health, ethics, and the environment but negatively in terms of taste, price, and convenience (Bryant, 2019). This suggests that the discrimination perceived by vegans from omnivores has declined in recent years. If an individual is motivated to commence a plant-based diet nowadays regardless of lacking taste, price and convenience, he or she will most likely perceive fewer degrees of discrimination and will therefore be more likely to be “extremely intrinsically motivated“ to commence a plant-based diet. These reasons could also explain why Hypothesis 7 was found inconclusive.

5.2.4 Intrinsic motivation and materials influence

Spurling & McMeekin (2013), found that recrafting practices through the incorporation of the three components of practice can lead to successful intervention strategies. Furthermore, (Parkinson & Twine, 2019) found that to transition to a plant-based diet seamlessly, an individual should possess the meaning, materials, and competencies related to the new practice. Based on this literature it was hypothesized that individuals would be more likely to be “extremely intrinsically motivated“ to commence a plant-based diet when having access to the knowledge, skills, and ingredients needed to transition seamlessly. The findings of the study are in line with the findings of Hypothesis 8 and conclude that individuals that place more importance on knowledge, skills, and ingredients are more likely to be “extremely intrinsically motivated“ to commence a plant-based diet. Perhaps, materials are a contributing factor to the rise in popularity of the vegan diet in recent years. Salliou and Thomopoulos (2019) suggest that the recent adoption of veganism has been largely influenced by visual exposure to documentaries and social media related to veganism. These types of media do not only serve as a way

of confronting omnivores, but they also allow for a transparent sharing of knowledge and skill related to veganism. This way, an individual interested in a plant-based diet, can gather knowledge, skills, and ingredients independently and follow a vegan role model online. Additionally, the rise of vegan food options in restaurants, ready-to-eat meals in supermarkets, and vegan home-delivery food kits ease the transition to a plant-based lifestyle. Individuals that are aware of this access to materials, could therefore perceive a transition to veganism as easier and thus be more intrinsically motivated to try out the diet.

5.2.5 Other findings

Besides the findings related to the hypotheses, the model also reported one other significant finding. The evidence suggests that individuals that are more conservative than liberal are more likely to be “extremely intrinsically motivated“ to commence a plant-based diet. In their study on intergroup threat theory, MacInnis & Hodson (2017) found that perceived threats from omnivores are highest in western society for individuals supporting right-wing authoritarianism or social dominance orientation. The scale in my study relating to political affiliation ranged from “very liberal“ to “very conservative“. Since this does not reflect a right-wing, authoritarianist orientation, my results do not directly dispute past literature. Looking at demographics of vegans of a 60-month food demand survey conducted by the Oklahoma State University, very liberal participants are 10 – 15% more likely to follow a vegan diet than participants with other political ideologies. Nonetheless, the results of the survey also concluded that the rate of vegans within these political groups rises much quicker among conservatives than liberals. Although more current vegans identify with being liberal, more conservative individuals than liberal individuals recently started their transition to a plant-based diet (Schmiess, 2018). These findings could motivate why individuals that are “slightly conservative“ are more likely to be “extremely intrinsically motivated“ to commence a plant-based diet compared to “slightly liberal“ individuals.

Lastly, Model 4 found one significant finding at the 90% confidence level related to a positive relationship between income and intrinsic motivation to commence a plant-based diet when exposed to a hedonic discourse. Parkinson and Twine (2019) found that veganism is perceived as more expensive than conventional diets. Individuals that have a higher discretionary income could therefore be more motivated by the personal health benefits mentioned in the hedonic discourse since they can spend more money on health-related goals than individuals with less discretionary income and might also place higher importance on such. These suggestions are also reflected in the literature. Woolf et al. (2015) found that families with higher discretionary income are more likely to experience good health due to the conditions of their environment. The authors argue that individuals with higher discretionary income experience better health due to their ability to afford medical care as well as a healthy diet which is often further reflected onto their children (Woolf et al., 2015). Motivated by their environment, more affluent individuals might therefore be more interested in the personal benefits associated with a vegan

diet. However, it is important to keep in mind that this finding is merely significant at the 90% confidence level and thus its generalizability is limited.

5.3 Limitations

To conduct my survey, I made use of an ordinal logistic regression. By using this type of regression, I was able to distinguish what effect different categorical variables had on intrinsic motivation. My study originally included 320 observations which were reduced to a final sample of 280 observations after eliminating observations due to missing values, failed attention checks, and variable categories related to the answer “Prefer not to say“. The first limitation of my study is the final sample size. To obtain my data I spent 192US\$ on Amazon Turk to make sure the respondents in my sample were part of the target population of US citizens. Had I had more funds or time to collect the data, I would have been able to improve the generalizability of the study by collecting more responses. Furthermore, the sample size could also explain the lack of findings. Findings such as the positive relationship between hedonic discourse in interaction with income on intrinsic motivation were only significant at the 90% confidence level. Had I collected a higher sample size, presumably more significant findings at the 95% confidence level could have been uncovered. Nonetheless, collecting my own data was the right choice for my type of study since this allowed me to gather relevant, timely information from the target population I wanted to investigate.

The second limitation of the study is related to the questions included in the survey. In retrospect, it would have been beneficial to rephrase questions related to family support, social circle support, and materials influence for easier interpretability. Instead of asking how intrinsically motivated individuals would be, it would have been better to ask respondents to rate the level of importance of family support, social circle support and materials support concerning their intrinsic motivation. This way, it would have been easier to interpret the results of the model and consequently draw conclusions from it.

Another limitation of the study is the lack of validation questions. To validate that the treatment condition captures the differences in discourse (hedonic, ascetic, or neutral) it would have been valuable to include the same type of question following each type of treatment. This way, I would have been able to capture possible differences in responses between the three types of discourses which would have served as an indicator of validity within my study. Without including a validity question, I am not able to verify to which extent the discourses differ in the view of survey participants. Nonetheless, the questions asked for each type of discourse provided further insights into the general attitude of respondents exposed to either the hedonic or ascetic discourse treatment condition. The neutral discourse did not include a specific question but rather an attention check. Therefore one-third of the sample participated in the attention check and it would have been beneficial to obtain answers from

every respondent in the survey. Nonetheless, the attention check was passed by 94.3% of the respondents exposed to it which suggests good data reliability.

Besides survey limitations, I also uncovered limitations concerning the dataset. When testing the assumptions of the model, it became evident that the proportional odds assumption does not hold. Since the logistic regression is of ordinal type, an assumption of this algorithm is that the changes from one category of a variable to another adjacent category of a variable are of similar size. Since this is not the case in my model, some category changes affect the extent of intrinsic motivation more or less than other category changes within an independent variable. Although this is a limitation in terms of the predictive power of the model, my research was focused on developing a model with high explanatory power. Therefore, the extent to which this limitation challenges my results is only marginal.

The last limitation is related to the lack of findings regarding the main treatment effect *Discourse*. My study investigated the effect of different types of discourses on the intrinsic motivation to commence a plant-based diet. Hereby, importance was only placed on the content of the message defining veganism but not on the context in which it was being displayed. This could be one of the reasons for a lack of significant findings between *Discourse* and *Intrinsic Motivation*. Past literature found that different customer profiles evaluate food-related discourses differently depending on the importance they place on notions of health, quality, pleasure, and taste (Chrysochou, Askegaard, Grunert & Kristensen, 2010). The study by Chrysochou, Askegaard, Grunert and Kristensen (2010), categorized consumers into groups of idealists and pragmatists that place a higher importance on either process characteristics and product ingredients or types of products and health consequences, respectively. Not only do these customer groups place importance on different food-related characteristics, but they also have different demographic profiles. Whereas idealists tend to live with more than two people, possess a higher level of education and a normal body weight, pragmatists tend to live alone, are less educated and more often overweight (Chrysochou, Askegaard, Grunert & Kristensen, 2010). By taking into account customer characteristics and tailoring the type of discourse to the end-consumer, my study could have uncovered findings which highlight the difference in effectiveness of different discourses.

5.4 Future research

To gather further insights, future research should investigate several areas. First of all, future research should investigate differences in advertisements explicitly related to vegan products by modifying the main treatment variable *Discourse* and adjusting it to different customer profiles. Hereby the focus should remain on advertising one vegan product using an ascetic discourse and comparing this to advertisements of the same product using different types of hedonic discourses. These hedonic discourses should either highlight the personal health benefits to be gained from a vegan diet (Cole, 2008) to cater to the idealist consumer, or mention factors such as *material substitution, new food*

exploration, food creativity, and taste. Twine (2018) discovered that these material elements of social practice foster the transition to a plant-based diet by focussing on notions of pleasure and taste which have also been found to appeal to pragmatist consumers (Chrysochou, Askegaard, Grunert & Kristensen, 2010). Future research should also investigate the effect of other contextual factors such as the brand name of the vegan product or the general branding strategy of the company selling the vegan product since these can further alter the perception of the health message used to market a vegan product (Chrysochou, 2010). Lastly, future studies should research if social marketing messages incorporated in ascetic or hedonic discourses heighten an individual's intrinsic motivation to try out a vegan product. Marketing strategies oftentimes appeal to customers emotions for example by heightening an individual's fear of exclusion. Given that veganism is increasing in popularity, it would be interesting to see if a similar fear of exclusion could be created for vegan products.

Another area that could be investigated further is the steep increase of "conservative vegans" compared to "liberal vegans". It would be interesting to uncover factors that explain why the acceptance of veganism is surging in this population segment, although the majority of current vegans identify as liberal (Parkinson & Twine, 2019), and the diet has been known to be criticized the most by right-wing authoritarianist groups (MacInnis & Hodson, 2017). Besides investigating the acceptance and commencement of the vegan diet, it would also be valuable to investigate how the factors included in my study influence a long-term, sustainable vegan diet. Oftentimes, individuals engage in a change, only to revert to their old lifestyle habits later on. By conducting a long-term study on vegan transitioning, further insights could be generated on the factors that support individuals the most in sticking to their dietary change long-term. Lastly, it would be of value to research if repositioning veganism as a cheap diet would motivate individuals from low household incomes to transition to a plant-based diet. My study showed that at the 90% confidence level, individuals with higher household incomes are more likely to be "extremely intrinsically motivated" to commence a plant-based diet for personal health reasons. Nonetheless, these health benefits provide the most value to low-income households which are most susceptible to health problems due to a lack of resources (Woolf et al., 2015). If veganism would be seen as an inexpensive diet and therefore become more attractive to such households, the risk of health problems for this population could be reduced drastically.

6. Conclusion

6.1 Synthesizing findings

My study aimed to answer the following research question and sub-questions:

Research Question

How does repositioning the connotations of veganism influence the likelihood of an individual to commence or continue a plant-based diet long-term?

Sub Questions:

- 1) Does the repositioning elicit different responses for men and women?
- 2) Does the repositioning elicit different responses for low and high-income households?
- 3) Does the repositioning elicit different responses for religious and non-religious people?
- 4) Does the repositioning elicit different responses for different political philosophies?
- 5) What influence does repositioning have on perceived barriers such as lacking social and family support or lacking dietary-related knowledge, skills, and ingredients?

Synthesizing the findings of my research the research question can be answered as follows. Repositioning the connotations of veganism alone does not influence an individual's intrinsic motivation to commence a plant-based diet. Furthermore, repositioning the connotations of veganism does not elicit different responses for men and women. Likewise, no inferences can be made on differences between religious and non-religious people when exposed to different discourses. Although the study found that differences in political ideologies in individuals do not elicit differences in intrinsic motivation when being exposed to different types of discourse, the findings of my study conclude that more conservative individuals are more likely to be “extremely intrinsically motivated“ to commence a plant-based diet compared to more liberal individuals. My study also showed that an individual's intrinsic motivation is not affected by the degree of family support but is negatively influenced when a higher degree of importance is placed on social support. Nonetheless, a lower degree of importance placed on the presence of materials related to veganism lowers an individual's intrinsic motivation to commence a plant-based diet. Furthermore, the interaction of family support, social support, or materials with hedonic or ascetic discourse does not alter an individual's intrinsic motivation. Lastly, individuals with higher discretionary income tend to be more intrinsically motivated by hedonic discourse but this relationship has significance only at the 90% confidence level.

6.2 Managerial Implications

The results of my study show that, generally, the less value an individual attributes to social support, and the more value an individual attributes to the presence of dietary-related knowledge, skills, and ingredients, the more likely this individual will be to commence a plant-based diet. Nonetheless, commencing a plant-based diet does not mean that one continues this diet forever. Hence, my findings should contribute to marketing strategies that will not only encourage individuals to commence a plant-based diet but that will also aid in sustaining it long-term. A practical implication resulting from my study would be to develop an interactive mobile application that aids motivated individuals with their transition to a plant-based diet. By developing a social network focused on the sharing of knowledge and skills related to veganism, individuals would be provided with easy access to a vegan network and materials needed to make a long-term transition to veganism successful. The application could feature cooking classes, grocery lists, blogs related to the nutritional value of vegan ingredients, and posts related to vegan-related news. This way interested individuals would find product-related, vegan diet information to maximize their health while growing a network of like-minded individuals to encourage their long-term plant-based journey.

Woolf et al. (2015) found that individuals with less discretionary income do not value personal health as much as wealthier individuals do but are most at risk for developing serious health problems due to a lack of resources. Another type of vegan application that focuses on the affordability of the vegan diet would be a solution to this. Instead of focusing on health benefits and social support, this application should list available discount codes and coupons for vegan ingredients and restaurants. By incorporating a “map feature“, users of the app would additionally see where to redeem these coupons which would provide them with more materials needed to facilitate this dietary change. Crowd-sourced, low-cost recipes featuring discounted vegan ingredients could further lower the barriers for this demographic to transition to a plant-based diet.

Lastly, the finding of Model 4 presents a positive relationship between income and intrinsic motivation when exposed to a hedonic discourse at the 90% confidence level. A practical implication resulting from this would be to exclude omission terms such as “excludes meat“ or “without dairy“ on high-end vegan products like organic or fair-trade foods. Such products should feature hedonic statements that highlight the ingredients contained in the vegan product such as “high in protein“ or “rich in fibre“. This way, the product focus is shifted away from being a “replacement for meat“ and instead represents a “must-have addition for a healthier life“. Through this, individuals with higher discretionary income might be more motivated to try out these products, since they tend to be interested in the health benefits related to a vegan diet.

Regardless of the many factors influencing an individual's choice to commence a plant-based diet, it is evident that this diet is gaining rapid acceptance within society. The global vegan food market is expected to double in value from 14.2B US\$ in 2018 to 31.4B US\$ in 2026 (Thomas & Deshmukh, 2019). Given this considerable potential for plant-based food producers to profit from this emerging food trend, the question becomes how to allow all members of society to benefit from it. Governments must not only realize the business opportunities that the vegan food market brings, but also its potential to alleviate stress on the national health care system by enabling citizens from various social strata to afford and embrace vegan food. This potential for societal change calls for new governmental initiatives focussed on re-investing vegan businesses' tax money into educational programs focusing on making veganism affordable, accessible, and most importantly palatable. By engaging in such initiatives, governments will see positive returns in the long run. Not only will vegan businesses generate profitable returns, but citizens will also be healthier, physically, and mentally, accumulate less medical debt and hence become more productive members of society. After all, positive societal change and veganism have one thing in common: they are most effective when embraced in unity and into the distant future.

7. References

Articles:

- Ajzen, I. (1991). The theory of planned behaviour. *Organizational Behaviour and Human Decision Processes*, 50(2), 179-211.
- Bryant, C.J. (2019). We Can't Keep Meating Like This: Attitudes towards Vegetarian and Vegan Diets in the United Kingdom. *Sustainability*, 11, 1-17.
- Chrysochou, P. (2010). Food health branding: The role of marketing mix elements and public discourse in conveying a healthy brand image. *Journal of Marketing Communications*, 16:1-2, 69-85.
- Chrysochou, P., Askegaard, S., Grunert, K.G., Kristensen, D.B. (2010). Social discourses of healthy eating. A market segmentation approach. *Appetite*, 55, 288 – 297.
- Chwialkowska, A. (2018). The role of the Family in the Adoption of a Vegan Diet. *Journal of Marketing Development and Competitiveness*, 12(4).
- Cole, M. (2008). Asceticism and hedonism in research discourses of veganism. *British Food Journal*, 110(7), 706-716.
- Crawford, E., & Worsley, A. (2006). Public views of the benefits and barriers to the consumption of a plant-based diet. *European Journal of Clinical Nutrition*, 60, 828-837.
- Graça, J., Calheiros M., & Oliveira, A. (2015). Attached to meat? (Un)Willingness and intentions to adopt a more plant-based diet. *Appetite*, 95, 113-125.
- Greenbaum, J. (2012). Managing Impressions: “Face-Saving” Strategies of Vegetarians and Vegans. *Humanity & Society*, 36(4), 309-325.
- Kaminski M., Skonieczna-Zydecka K., Nowak J.K. & Stachowska E., (2020). Global and local diet popularity rankings, their secular trends, and seasonal variation in Google Trends data. *Nutrition*, 79-80.
- Loughnan, S., Bastian, B., & Haslam, N. (2014). The Psychology of Eating Animals. *Current Directions in Psychological Science*. 23(2), 104-108.
- MacInnis, C., & Hodson, G. (2017). It ain't easy eating greens: Evidence of bias toward vegetarians and vegans from both source and target. *Group Processes & Intergroup Relations*, 20(6), 721-744.
- Markowski, K., & Roxburgh, S. (2019). “If I became a vegan, my family and friends would hate me:” Anticipating vegan stigma as a barrier to plant-based diets. *Appetite*, 135, 1-9.
- Poots, A. & Parry, J. (2007). Vegan Sexuality: Challenging Heteronormative Masculinity through Meat-free Sex. *Feminism & Psychology*, 20(1), 53-72.

- Redwood, D. & Shealy, N. (2015). The China Study: The Most Comprehensive Study of Nutrition Ever Conducted and the Startling Implications for Diet, Weight Loss and Long-term Health. *The Journal of Alternative And Complementary Medicine*. Vol. 11, pp. 1117 - 1119.
- Radnitz, C., Beezhold, B., & DiMatteo, J. (2015). Investigation of lifestyle choices of individuals following a vegan for health and ethical reasons. *Appetite*, 90, 31-36.
- Rios, K., Sosa, N., & Osborn, H. (2018). An experimental approach to Intergroup Threat Theory: Manipulations, moderators, and consequences of realistic vs. symbolic threat. *European Review of Social Psychology*. 29(1), 212-255.
- Salliou, N. & Thomopoulos, R. (2019). Adopting, adhering to or abandoning veganism: insights on vegan diet transitions from life story accounts. *VITAMIN: Vegetarian Transition Argument Modelling*.
- Sobal, J., & Hanson, K. (2014). Family dinner frequency, settings and sources, and body weight in US adults. *Appetite*, 78(C), 81-88.
- Stryker, S., & Serpe, R.T. (1982). Commitment, Identity Salience, and Role Behaviour: Theory and Research Example. *Personality, Roles, and Social Behaviour*.
- Twine, R. (2017). Materially Constituting a Sustainable Food Transition: The Case of Vegan Eating Practice. *Sociology*, 52(1), 166-181.
- Waters, C. (2020). To V or not to V: Contingencies of Going Vegan. *Humanity & Society*, 1-19.
- Żukiewicz-Sobczak et al. (2014). Obesity and poverty paradox in developed countries. *Ann Agric Environ Med*. Vol 21(3), pp. 590-594.

Books:

- Festinger, L. (1962). *A theory of cognitive dissonance*. Tavistock.
- Gagné, M. & Deci, E. (2014). *The History of Self-Determination Theory in Psychology and Management*. The Oxford Handbook of Work Engagement, Motivation, and Self-Determination Theory.
- Liao, T. F. (1994). *Interpreting Probability Models: Logit, Probit, and Other Generalized Linear Models*. Thousand Oaks, CA: Sage Publications, Inc. Retrieved from <https://methods-sagepub-com.eur.idm.oclc.org/book/interpreting-probability-models>.
- Shove, E., Pantzar, M. & Watson, M. (2012). *The Dynamics of Social Practice: Everyday Life and How It Changes*. London: SAGE.

Reports:

- Parkinson, C., & Twine, R. (2019). Pathways to Veganism: Exploring Effective Messages in Vegan Transition. Final Report, Edge Hill University.
- Spurling, N., & McMeekin, A. (2013). Interventions in practice: re-framing policy approaches to consumer behaviour. Final Report, Sustainable Practices Research Group.

Woolf, S.H., Aron, L., Dubay, L., Simon, S.M., Zimmerman, E. & Luk, K. (2015). How are income and wealth linked to health and longevity?

Websites:

Schmiess, J. (2018). Is vegetarianism/veganism growing more partisan over time? Retrieved from: <https://forum.effectivealtruism.org/posts/ENdEcXCmHMWPk6zog/is-vegetarianism-veganism-growing-more-partisan-over-time-2>

Thomas, A., Deshmukh, R. (2019). Vegan Food Market Outlook – 2026. Retrieved from <https://www.alliedmarketresearch.com/vegan-food-market>.

Waters, H. & Graf, M. (2018). Chronic diseases are taxing our healthcare system and our economy. Retrieved from <https://www.statnews.com/2018/05/31/chronic-diseases-taxing-health-care-economy/>.

8. Appendix

Appendix I:

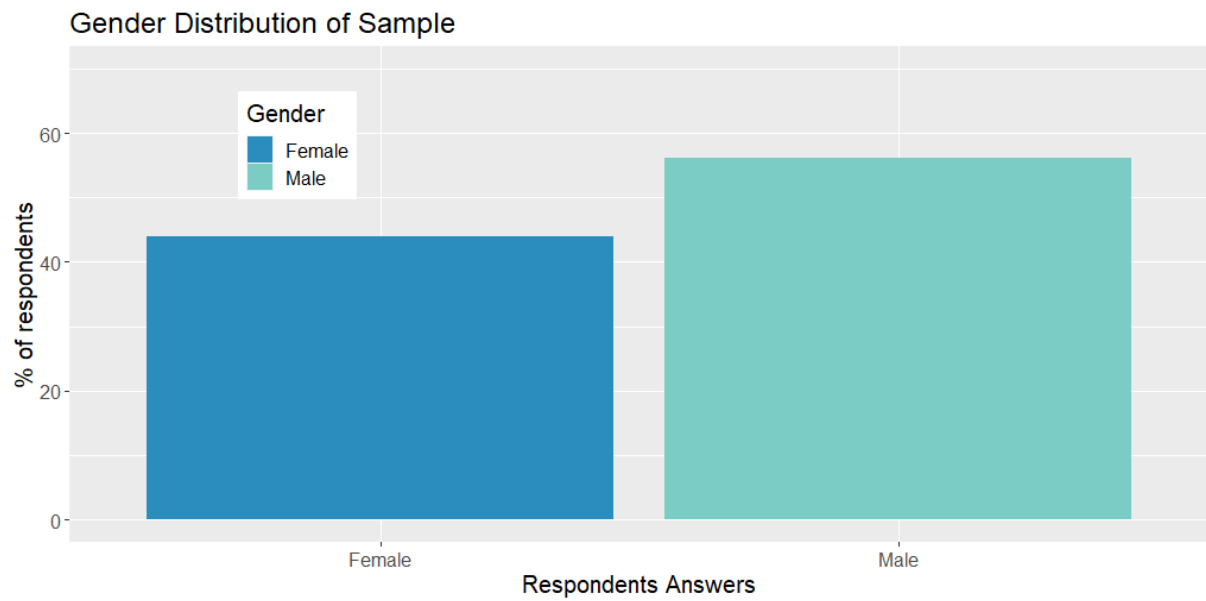


Figure A: Gender distribution of the sample

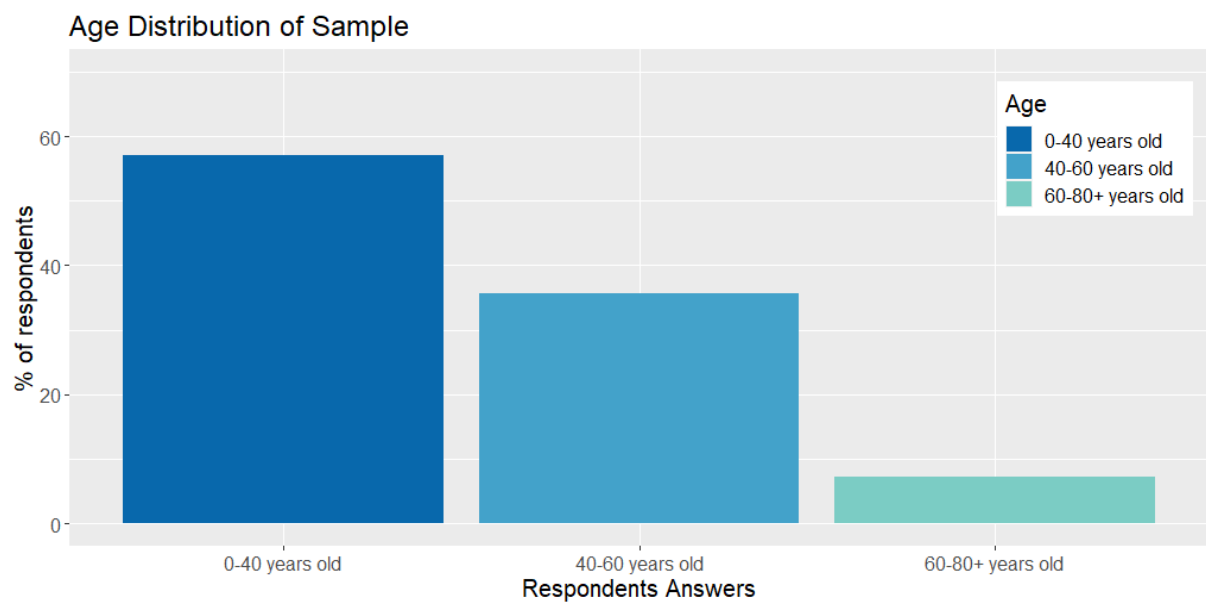


Figure B: Age distribution of the sample

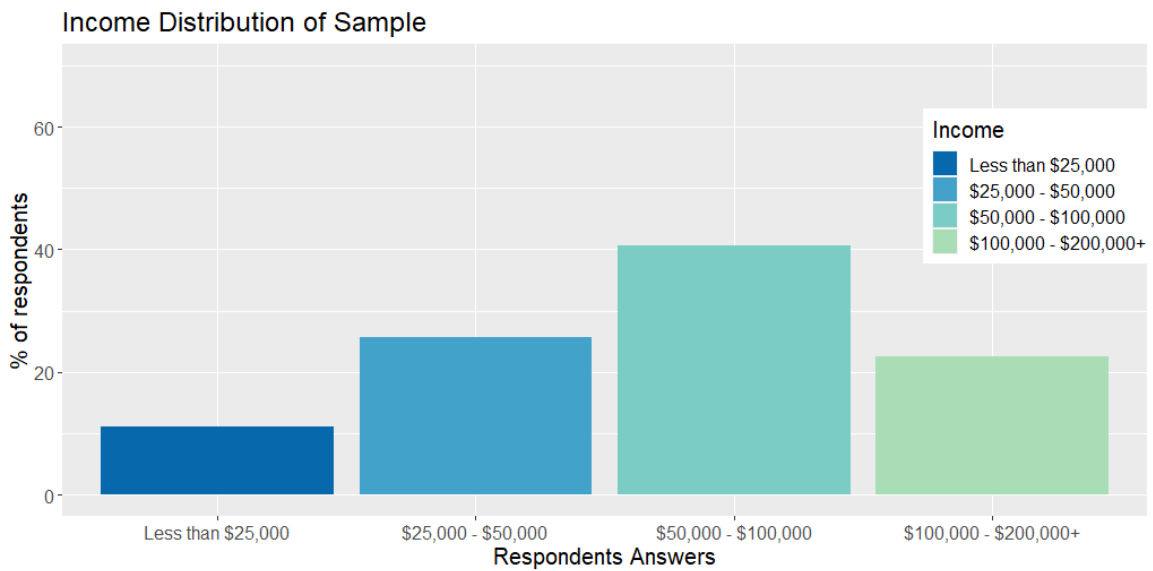


Figure C: Income distribution of the sample (per year in US\$)

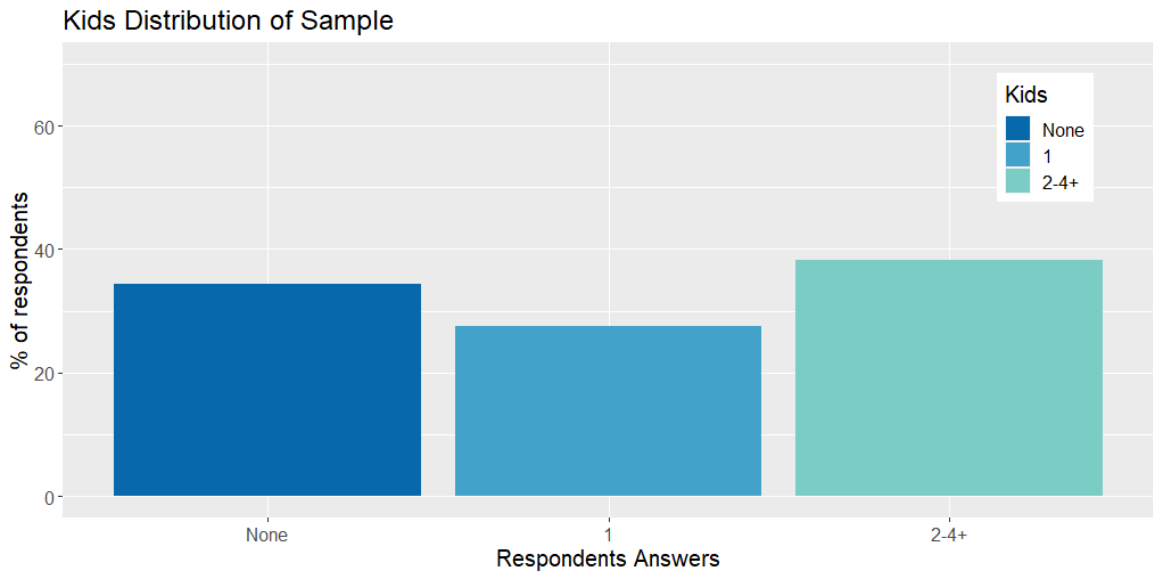


Figure D: Kids distribution of the sample

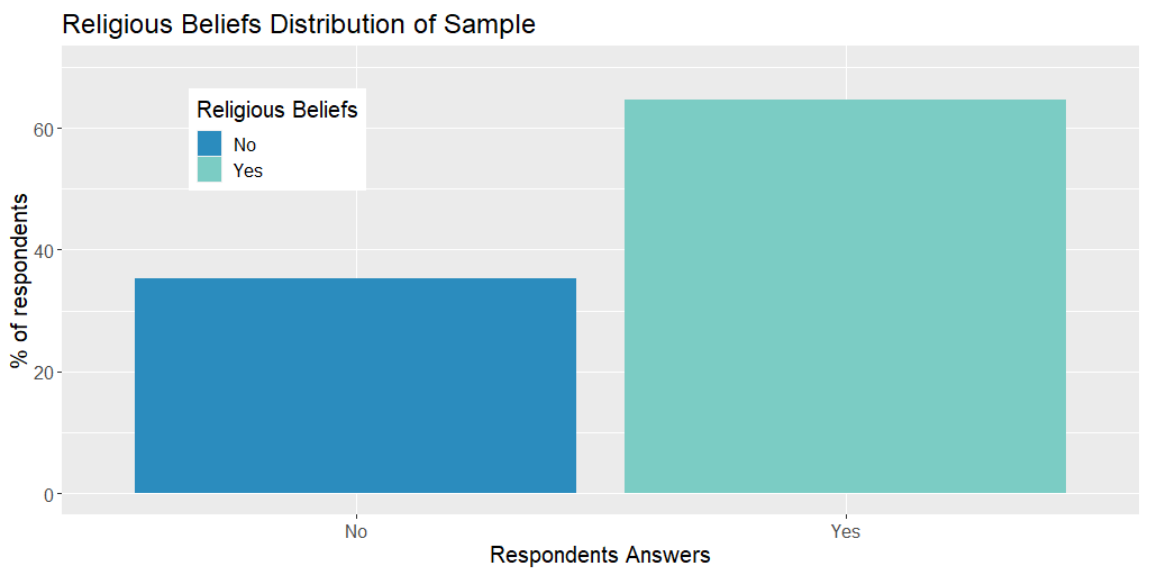


Figure E: Religious beliefs distribution of the sample

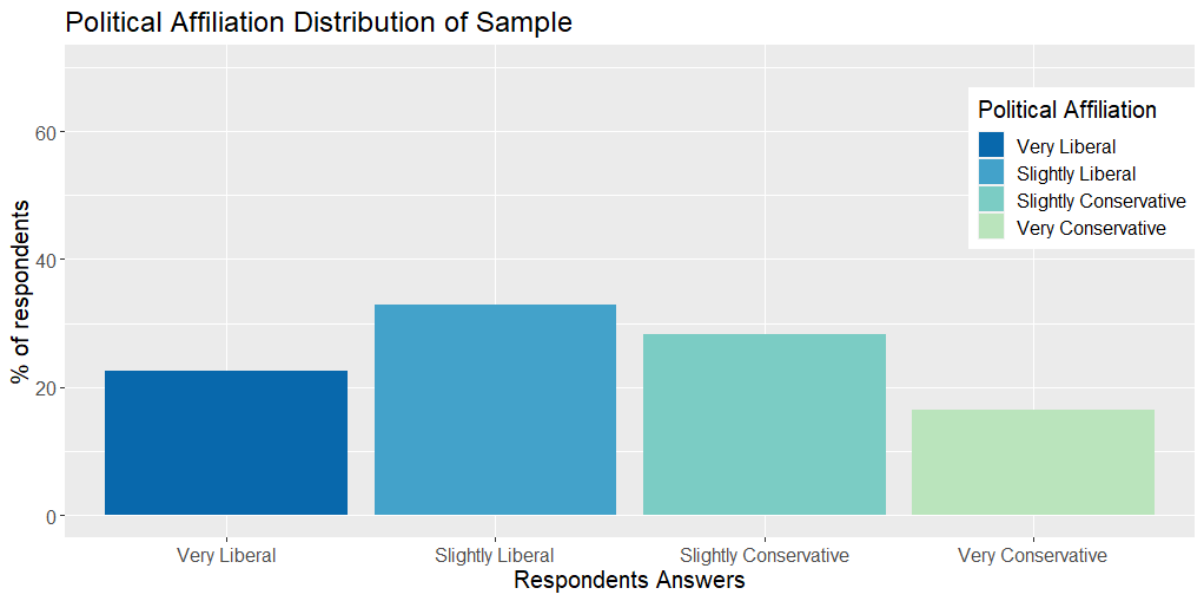


Figure F: Political Affiliation distribution of the sample

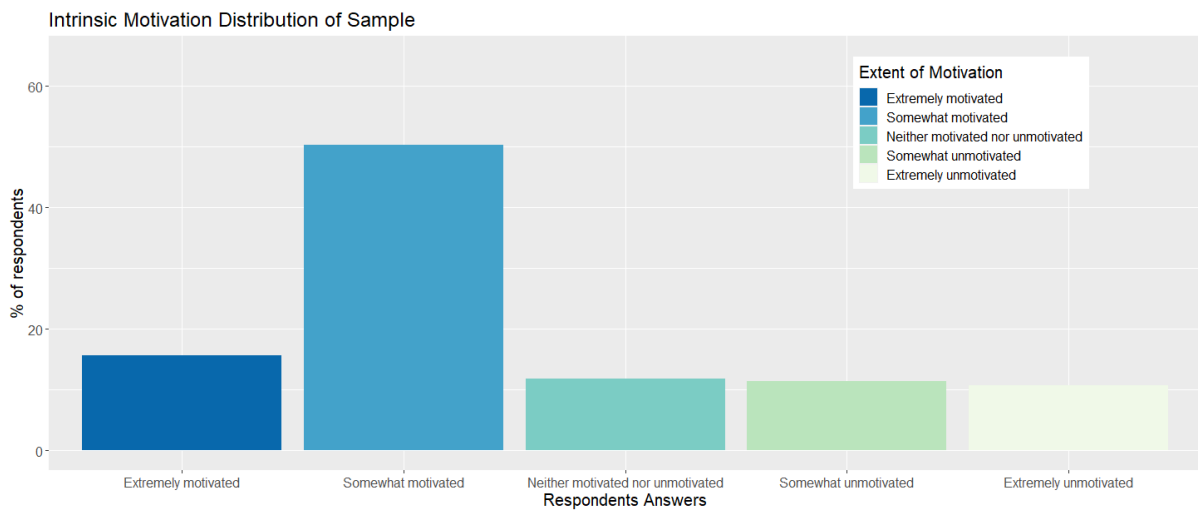


Figure G: Distribution of answers related to intrinsic motivation to commence a plant-based diet

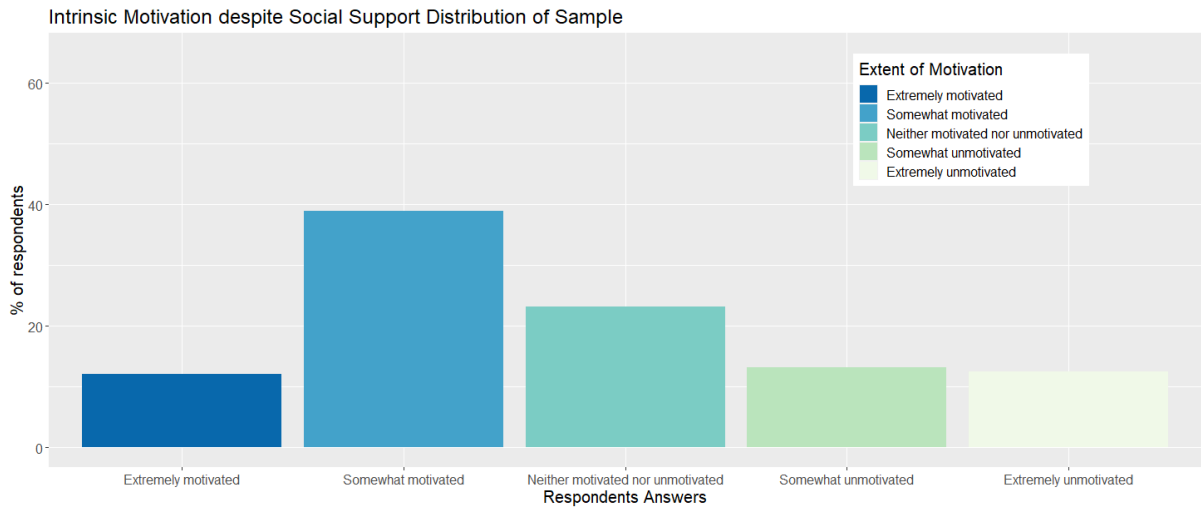


Figure H: Distribution of answers related to intrinsic motivation despite lacking social support

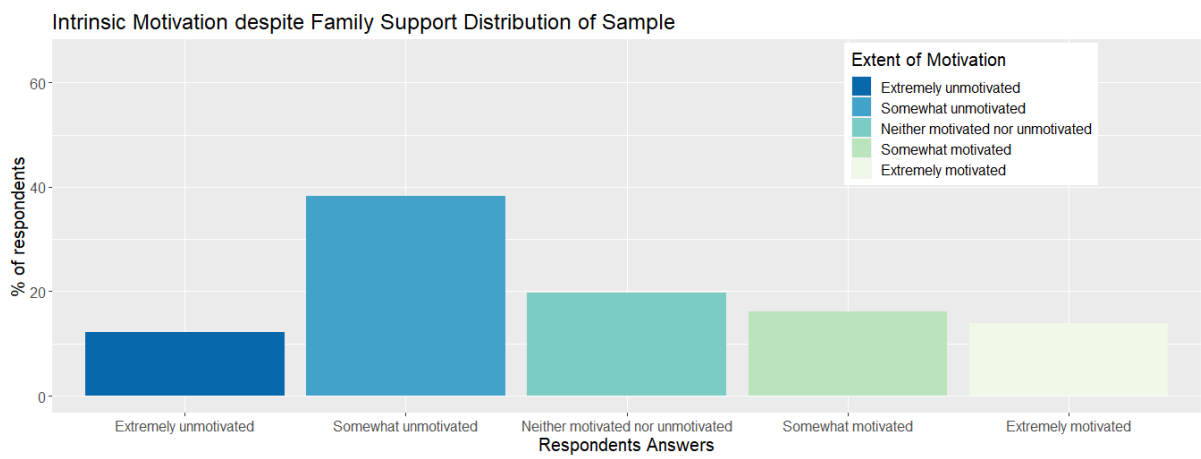


Figure I: Distribution of answers related to intrinsic motivation despite lacking family support

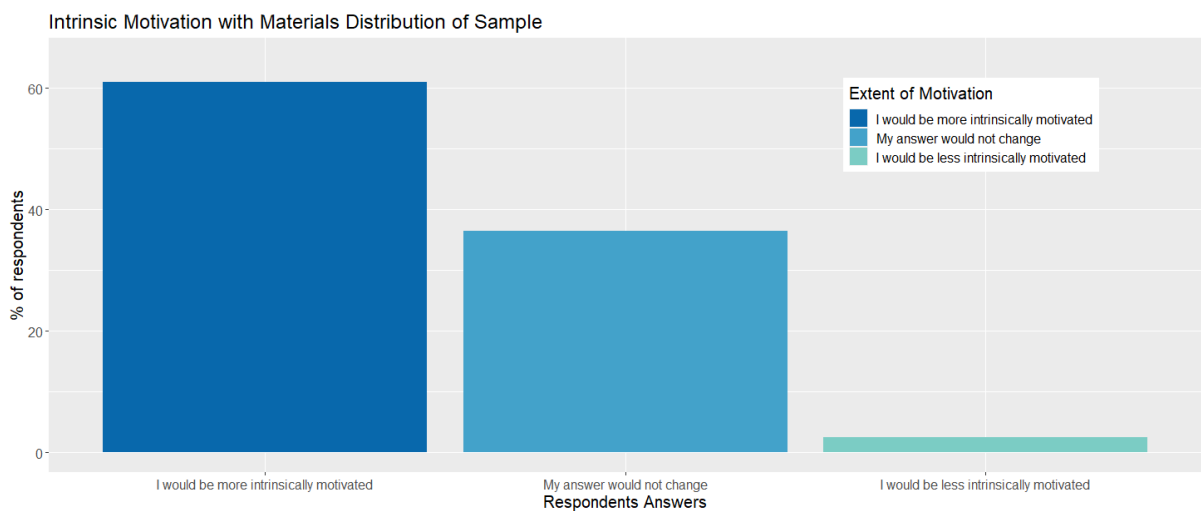


Figure J: Distribution of answers related to effect of ingredients, knowledge and skills on intrinsic motivation

Predictors	scale(Intrinsic_Motivation)			scale(Intrinsic_Motivation)			scale(Intrinsic_Motivation)			scale(Intrinsic_Motivation)		
	Estimates	CI	p	Estimates	CI	p	Estimates	CI	p	Estimates	CI	p
(Intercept)	-3.12	-3.48 – -2.76	<0.001	-3.01	-3.44 – -2.58	<0.001	-2.56	-3.19 – -1.93	<0.001	-2.87	-3.82 – -1.92	<0.001
Discourse [ascetic]	-0.06	-0.24 – 0.11	0.469	-0.31	-0.83 – 0.21	0.244	-0.28	-0.80 – 0.24	0.287	-0.32	-1.80 – 1.16	0.672
Discourse [hedonic]	-0.05	-0.23 – 0.12	0.540	-0.13	-0.66 – 0.39	0.611	-0.04	-0.57 – 0.48	0.874	0.72	-0.73 – 2.17	0.332
Family_Influence	0.14	0.05 – 0.23	0.002	0.12	-0.06 – 0.31	0.192	0.17	-0.02 – 0.35	0.074	0.19	-0.01 – 0.38	0.064
Social_Circle_Influence	0.43	0.33 – 0.52	<0.001	0.41	0.25 – 0.58	<0.001	0.38	0.21 – 0.55	<0.001	0.38	0.20 – 0.56	<0.001
Materials_Influence	0.51	0.37 – 0.65	<0.001	0.51	0.36 – 0.66	<0.001	0.48	0.33 – 0.63	<0.001	0.45	0.20 – 0.71	0.001
Discourse [ascetic] * Family_Influence				0.10	-0.15 – 0.34	0.433	0.04	-0.21 – 0.29	0.740	0.03	-0.23 – 0.29	0.839
Discourse [hedonic] * Family_Influence				-0.03	-0.26 – 0.20	0.809	-0.08	-0.32 – 0.15	0.494	-0.11	-0.36 – 0.13	0.371
Discourse [ascetic] * Social_Circle_Influence				-0.02	-0.26 – 0.22	0.871	0.02	-0.22 – 0.27	0.859	0.01	-0.25 – 0.26	0.944
Discourse [hedonic] * Social_Circle_Influence				0.06	-0.17 – 0.28	0.626	0.08	-0.15 – 0.30	0.493	0.12	-0.12 – 0.36	0.312
Age							-0.08	-0.20 – 0.04	0.207	-0.16	-0.36 – 0.04	0.114
Gender							0.01	-0.13 – 0.16	0.841	0.19	-0.09 – 0.47	0.173
Income							-0.02	-0.10 – 0.06	0.570	0.06	-0.07 – 0.19	0.391
Kids							0.03	-0.07 – 0.14	0.500	0.14	-0.02 – 0.30	0.093
Religion							0.01	-0.17 – 0.19	0.891	-0.01	-0.32 – 0.29	0.937
Political_Affiliation							-0.11	-0.18 – -0.04	0.004	-0.17	-0.30 – -0.04	0.008
Discourse [ascetic] * Gender										-0.31	-0.68 – 0.06	0.101
Discourse [hedonic] * Gender										-0.19	-0.57 – 0.19	0.334
Discourse [ascetic] * Income										-0.06	-0.25 – 0.13	0.527
Discourse [hedonic] * Income										-0.17	-0.36 – 0.03	0.096
Discourse [ascetic] * Age										0.21	-0.12 – 0.53	0.207
Discourse [hedonic] * Age										0.12	-0.17 – 0.42	0.421
Discourse [ascetic] * Kids										-0.19	-0.45 – 0.06	0.141
Discourse [hedonic] * Kids										-0.17	-0.42 – 0.08	0.177
Discourse [ascetic] * Religion										-0.04	-0.48 – 0.41	0.876
Discourse [hedonic] * Religion										0.10	-0.37 – 0.56	0.679
Discourse [ascetic] * Political_Affiliation										0.12	-0.07 – 0.30	0.227
Discourse [hedonic] * Political_Affiliation										0.06	-0.12 – 0.25	0.496
Discourse [ascetic] * Materials_Influence										0.17	-0.19 – 0.53	0.347
Discourse [hedonic] * Materials_Influence										-0.13	-0.51 – 0.26	0.518
Observations	280			280			280			280		
R ² / R ² adjusted	0.647 / 0.641			0.650 / 0.638			0.664 / 0.645			0.682 / 0.645		
Deviance	98.484			97.714			93.799			88.844		
AIC	516.034			521.836			522.388			535.191		

Table A: Output linear regression models

Predictors	Intrinsic_Motivation			Intrinsic_Motivation			Intrinsic_Motivation			Intrinsic_Motivation		
	Odds Ratios	CI	p	Odds Ratios	CI	p	Odds Ratios	CI	p	Odds Ratios	CI	p
5 4	0.00	0.00 – 0.00	<0.001	0.00	0.00 – 0.00	<0.001	0.00	0.00 – 0.00	<0.001	0.00	0.00 – 0.00	<0.001
4 3	0.00	0.00 – 0.00	<0.001	0.00	0.00 – 0.00	<0.001	0.00	0.00 – 0.01	<0.001	0.00	0.00 – 0.05	<0.001
3 2	0.00	0.00 – 0.00	<0.001	0.00	0.00 – 0.00	<0.001	0.00	0.00 – 0.01	<0.001	0.00	0.00 – 0.00	<0.001
2 1	0.00	0.00 – 0.00	<0.001	0.00	0.00 – 0.01	<0.001	0.02	0.01 – 0.04	0.001	0.01	0.00 – 0.03	0.007
Discourse [ascetic]	1.37	0.75 – 2.51	0.310	3.44	0.56 – 21.96	0.186	3.32	0.52 – 21.84	0.208	24.75	0.20 – 3354.28	0.197
Discourse [hedonic]	1.17	0.64 – 2.16	0.607	1.66	0.29 – 9.50	0.565	1.38	0.23 – 8.36	0.728	0.10	0.00 – 11.22	0.337
Family_Influence	0.62	0.45 – 0.87	0.006	0.65	0.33 – 1.23	0.189	0.55	0.28 – 1.07	0.083	0.51	0.24 – 1.04	0.067
Social_Circle_Influence	0.25	0.17 – 0.35	<0.001	0.27	0.15 – 0.49	<0.001	0.28	0.15 – 0.51	<0.001	0.26	0.13 – 0.52	<0.001
Materials_Influence	0.18	0.10 – 0.31	<0.001	0.18	0.10 – 0.32	<0.001	0.20	0.11 – 0.35	<0.001	0.23	0.09 – 0.60	0.003
Discourse [ascetic] * Family_Influence				0.84	0.35 – 2.04	0.691	0.99	0.41 – 2.45	0.981	1.06	0.41 – 2.80	0.901
Discourse [hedonic] * Family_Influence				1.07	0.47 – 2.43	0.875	1.22	0.53 – 2.84	0.643	1.35	0.55 – 3.32	0.512
Discourse [ascetic] * Social_Circle_Influence				0.89	0.37 – 2.12	0.797	0.77	0.32 – 1.87	0.572	0.84	0.32 – 2.16	0.712
Discourse [hedonic] * Social_Circle_Influence				0.83	0.38 – 1.81	0.649	0.79	0.36 – 1.72	0.551	0.69	0.29 – 1.62	0.393
Age							1.39	0.91 – 2.14	0.136	1.80	0.87 – 3.91	0.126
Gender [2]							0.81	0.48 – 1.35	0.417	0.42	0.14 – 1.18	0.104
Income							1.19	0.90 – 1.57	0.219	0.87	0.54 – 1.41	0.579
Kids							0.95	0.67 – 1.34	0.757	0.71	0.39 – 1.26	0.246
Religion [2]							0.84	0.45 – 1.57	0.587	1.03	0.34 – 3.21	0.961
Political_Affiliation							1.42	1.08 – 1.87	0.013	1.68	1.06 – 2.71	0.030
Discourse [ascetic] * Gender [2]										2.80	0.71 – 11.22	0.144
Discourse [hedonic] * Gender [2]										2.23	0.55 – 9.07	0.262
Discourse [ascetic] * Income										1.23	0.62 – 2.44	0.545
Discourse [hedonic] * Income										1.89	0.94 – 3.81	0.076
Discourse [ascetic] * Age										0.50	0.15 – 1.60	0.247
Discourse [hedonic] * Age										0.74	0.25 – 2.14	0.588
Discourse [ascetic] * Kids										2.03	0.80 – 5.26	0.143
Discourse [hedonic] * Kids										1.44	0.60 – 3.48	0.416
Discourse [ascetic] * Religion [2]										0.88	0.17 – 4.39	0.876
Discourse [hedonic] * Religion [2]										0.80	0.15 – 4.23	0.793
Discourse [ascetic] * Political_Affiliation										0.64	0.32 – 1.27	0.203
Discourse [hedonic] * Political_Affiliation										0.91	0.46 – 1.77	0.772
Discourse [ascetic] * Materials_Influence										0.43	0.11 – 1.63	0.218
Discourse [hedonic] * Materials_Influence										1.46	0.37 – 5.90	0.589
Observations	280			280			280			280		
R ² Nagelkerke	0.655			0.657			0.673			0.691		
Deviance	504.280			502.859			491.558			478.921		
AIC	522.280			528.859			529.558			544.921		

Table B: Output ordinary regression models

Appendix II: Survey: Dietary Choices

We are conducting an academic survey about personal motivations and intentions to commence a new diet. The link below to complete the survey. At the end of the survey, you will receive a code to paste into the box below to receive credit for taking our survey. By participating in this survey, you agree for the requester to use all of your provided data for the purposes of his/her research only.

Reward: 0.50€ per task

Tasks available: 1

Duration: 2-5min

Requester: E Borsdorf

1. Which gender identity do you most identify with?

- A. Male
- B. Female
- C. Non-Conforming
- D. Prefer not to say

2. What is your age?

- A. 0 - 20 years old
- B. 20 - 40 years old
- C. 40 - 60 years old
- D. 60 – 80 years old
- E. 80+ years old
- F. Prefer not to say

3. What is your yearly household income?

- A. Less than \$25,000
- B. \$25,000 - \$50,000
- C. \$50,000 - \$100,000
- D. \$100,000 - \$200,000
- E. More than \$200,000
- F. Prefer not to say

4. How many kids do you have?

- A. None
- B. 1

- C. 2-4
- D. More than 4
- E. Prefer not to say

5. Are you religious?

- A. Yes
- B. No
- C. Prefer not to say

6. What is your political affiliation?

- A. Very Liberal
- B. Slightly Liberal
- C. Slightly Conservative
- D. Very Conservative
- E. Prefer not to say

Randomized Survey Block (Question 7,8 & 9)

7. Before proceeding with the survey, please carefully read through the statement below.

A vegan diet is a diet that consists of all plant-sourced ingredients including vegetables, legumes, grains, nuts, and seeds. This type of diet stems from veganism - a philosophy and diet that seeks to use all forms of plant-sourced food, clothing and products serving another purpose for the benefit of animals, humans and the environment. A big reason for individuals to commence a vegan diet are the health benefits associated with it. Furthermore, self-defined vegans report a more pleasurable eating experience due to the increased variety of food that is consumed and the satisfaction that comes with discovering new tastes. After all, life is about embracing change and societal progress - hence reaping the benefits of a vegan diet is an eye-opening experience anyone should get the chance to try.

How important is your personal health to you?

- A. Very unimportant
- B. Somewhat unimportant
- C. Indifferent/No opinion
- D. Somewhat important
- E. Very important

8. Before proceeding with the survey, please carefully read through the statement below.

A vegan diet is a diet that omits all animal-sourced ingredients including meat, fish, dairy and eggs. This type of diet stems from veganism - a philosophy and diet that seeks to exclude all forms of animal-sourced food, clothing and products serving another purpose for the benefit of animals, humans and the environment. A big reason for individuals to commence a vegan diet is the desire to reduce animal exploitation. Furthermore, self-defined vegans report a more pleasurable eating experience due to the reduction in guilt that comes with sourcing plant-based ingredients and reducing environmental emissions. After all, life is about human progress and learning - hence reducing the suffering of animals by adopting a vegan diet is an eye-opening experience anyone should get the chance to try.

How important is animal welfare to you?

- A. Very unimportant
- B. Somewhat unimportant
- C. Indifferent/No opinion
- D. Somewhat important
- E. Very important

9. Before proceeding with the survey, please carefully read through the statement below.

A vegan diet is a diet that consists of all plant-sourced ingredients including vegetables, legumes, grains, nuts, and seeds and omits all animal-sourced ingredients including meat, fish, dairy and eggs. This type of diet stems from veganism - a philosophy and diet that seeks to exclude all forms of animal-sourced food, clothing and products serving another purpose for the benefit of animals, humans and the environment. Reasons for individuals to commence a vegan diet range from a personal desire to reduce animal exploitation, to increase environmental protection efforts or to reap the personal health benefits associated with the diet.

Please select "Somewhat unimportant".

- A. Very unimportant
- B. Somewhat unimportant
- C. Indifferent/No opinion
- D. Somewhat important
- E. Very important

10. After reading this statement, how intrinsically motivated are you to try out a plant-based diet?

- A. Extremely motivated
- B. Somewhat motivated
- C. Neither motivated nor unmotivated
- D. Somewhat unmotivated
- E. Extremely unmotivated

11. If your social circle would not support the statement, how intrinsically motivated would you be to try out a plant-based diet?

- A. Extremely motivated
- B. Somewhat motivated
- C. Neither motivated nor unmotivated
- D. Somewhat unmotivated
- E. Extremely unmotivated

12. If your family would not support the statement, how intrinsically motivated would you be to try out a plant-based diet?

- A. Extremely motivated
- B. Somewhat motivated
- C. Neither motivated nor unmotivated
- D. Somewhat unmotivated
- E. Extremely unmotivated

13. If you would have access to the ingredients, knowledge and skills needed to make a transition to veganism easy, how much more intrinsically motivated would you be to try out a plant-based diet?

- A. I would be more intrinsically motivated to commence a plant-based diet
- B. My answer would not change
- C. I would be less intrinsically motivated to commence a plant-based diet

Here is your ID: \${e://Field/Random%20ID}

Copy the ID into MTurk.

When you have copied this ID, please click the next button to submit your survey.

If you took this survey without being an MTurk worker you can skip this step and press the next button to submit your survey.

We thank you for your time spent taking this survey.

Your response has been recorded.