

What's your beef with meat substitutes? Exploring barriers and facilitators for meat substitutes in omnivores, vegetarians, and vegans

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Abstract

The overconsumption of meat has been related to negative health, environmental, and animal welfare effects. As such, many people are now reducing their meat consumption, and for some this includes increasing their consumption of meat substitutes. While research has discussed the barriers towards the adoption of meat substitutes, there is a lack of studies examining the differences between omnivores and veg*ns. The objective of this research is to explore the facilitators, barriers, and negotiations (i.e., tensions) that various dietary groups encounter with meat substitutes. Six focus groups were conducted and our analysis found clear tension between many influences in food choice. These tensions result in the influences (sensory preferences, meat substitutes' classification, health perceptions, and social/culture) being both facilitators and barriers dependent on the dietary group. Yet, there are also key facilitators across all dietary groups such as resources (packaging and labelling), and food context (restaurants, takeaways), as well as barriers such as the "vegan tax" (high price) and lack of trust. A main value negotiation was also exhibited by all dietary groups, balancing familiarity with food/meal freedom and versatility. We provide a reflection on the practical implications for meat substitute companies.

Keywords: meat substitutes, meat reduction, vegan, vegetarian, flexitarian

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1. Introduction

There is a significant overconsumption of meat products within Western countries (Happer & Wellesley, 2019; Stoll-Kleemann & O’Riordan, 2015), with New Zealand being the sixth biggest consumer of meat per capita (OECD, 2021). The overconsumption of meat has been related to negative health effects, such as heart disease (Feskens et al., 2013), and cancer (Bouvard et al., 2015), and to negative environmental implications such as climate change and biodiversity declines (Stoll-Kleemann & Schmidt, 2017). Modern day meat production has also generated concerns around animal welfare, sparking related social movements (Mathur et al., 2020). These environmental, social and health implications have motivated many consumers to adjust their eating habits (Lentz et al., 2018).

Consequently, there has been a growing interest in meat substitutes and increased interest in flexitarian, vegan, and vegetarian diets (Kyriakopoulou et al., 2019; OECD/FAO, 2020). Recent statistics show that over 60% of New Zealanders have trialled or are willing to trial new meat substitutes (Brunton, 2019). This has been reflected in the forecasted market growth of a compound annual growth rate of 14.5% for meat substitutes globally for the period of 2020 to 2025 (BCC Research, 2020). Meat substitutes offer health, environmental, and animal welfare benefits (Apostolidis & McLeay, 2016; McBey et al., 2019). For instance, the amount of land required for most food crops used to create meat substitutes is believed to be less than that needed for keeping agricultural animals (Stehfest et al., 2009). Therefore, a substantial uptake in meat-free diets would clear sizeable areas of land, making it available for proactive climate change solutions such as conservation areas, and bioenergy crop farms (Stehfest, 2014; Stehfest et al., 2009).

There are various dietary groups that may be attracted to meat substitutes for different reasons. Indeed, research shows that attitudes towards meat substitutes change based on an individual's dietary group (Hagmann et al., 2019). For example, vegetarians and vegans have been found to dislike the sensory aspects of meat, and therefore wish to avoid it (Ruby & Heine, 2011). Conversely, meat consumers have reported desiring meat substitutes that are as close to meat, sensory wise, as possible (McBey et al., 2019). This paradox demonstrates how consumers are divided, and that there are different segments within the market that are worth exploring for meat substitutes, especially in how they overcome and encounter different perceptual, attitudinal, and behavioural barriers. Yet, very little research has specifically explored these differences in diets. Instead, research has focused on each dietary group (usually) independently, and tends to focus on the barriers rather than facilitators to adoption of meat substitutes. To fill this gap, our research seeks to explore the facilitators, barriers, and negotiations (i.e., tensions, trade-offs) that various dietary groups (vegans, vegetarians, and omnivores) encounter when (considering) consuming meat substitutes.

1.1 Facilitators and barriers to the adoption of meat substitutes

The motivations for consuming meat substitutes are related to meat reduction in general, focusing mainly on the environment and health (Elzerman et al., 2013; McIlveen et al., 1999; Siegrist & Hartmann, 2019). While studies have not usually compared and contrasted dietary groups, research has identified barriers towards eating meat substitutes in regard to sensory aspects and taste, trust, culture/tradition, convenience, familiarity and price.

Many consumers still favour the sensory aspects of animal meat, which is especially true for meat consumers (Hoek, Luning, et al., 2011). McBey et al. (2019) found that consumers claimed that a key barrier preventing them from preferring meat substitutes over other forms of protein was the poor sensory offerings of the product. The taste of a product is a key sensory

aspect that drives meat substitute acceptance (Elzerman et al., 2013; Weinrich, 2018), with consumers being likely to avoid meat substitutes if they fear that they will not enjoy the taste of them (Clark & Bogdan, 2019; McBey et al., 2019). The taste of meat is a significant motivator for consuming meat, and some vegetarians and vegans have even reported missing the flavour of certain meat products (Richardson et al., 1994). Conversely, when considering groups who opt to not consume animal meat, such as vegetarians and vegans, the sensory aspects of meat are often cited as a key reason for avoiding it (Hoek, Luning, et al., 2011; Ruby & Heine, 2011). Vegetarians and vegans can be repulsed by the sensory aspects of animal meat, such as the texture, taste and smell, implying that they would avoid meat substitutes that too closely mimic animal meat (McIlveen et al., 1999). In addition, Elzerman et al. (2011) found that meat substitutes appropriateness was influenced by the appearance of the meat substitute in combination with a meal, and less by its flavour and texture.

As meat substitutes are a relatively new food category, trust is especially important. This is because new food products and processes tend to be met with customer resistance and distrust (Hobbs & Goddard, 2015). Specifically, trust has been mentioned as a main barrier against the acceptance of meat substitutes (McBey et al., 2019). This barrier can be linked to the barrier of sensory aspects in two ways. Firstly, trust can be linked to food neophobia, as it is expected that if one has distaste, and in turn food neophobia towards a meat substitute, then there may also be an element of distrust. Secondly, the quality of meat is usually assessed visually by the consumer, for example the colour of the meat and the fat (Grunert, 2006). Therefore, sensory aspects have always been a key contributor to trust in meat products. Currently, meat substitutes cannot be assessed in a similar way, hence consumer trust, especially in the product's quality, is harder to earn. Furthermore, meat substitutes have often been considered as highly processed products and accused of having high levels of added salt,

which has concerned consumers (Circus & Robison, 2019; Clark & Bogdan, 2019; Tosun et al., 2020).

In many Western societies, it is traditionally believed that meat should be a main component of the average, balanced meal (Hoek, Luning, et al., 2011), which is the ideology of males especially (Ruby & Heine, 2011; Sobal, 2005). Meat is also traditionally associated with status within Western culture (e.g. Aiking, 2011; Bogueva et al., 2017; Lentz et al., 2018; Ruby & Heine, 2011), further emphasising its importance in society. For some countries, such as France, Italy, and Spain, meat substitutes have been rejected as they are not part of traditional dishes, or used in traditional cooking practices (de Boer et al., 2006). Further, as social norms have a great influence on individuals' eating choices and traditions are usually shared among communities, traditional values can be a significant barrier to the acceptance of meat substitutes (Cheah et al., 2020).

Convenience is a very significant driver of food choice (Namugayi, 2014). Meat is commonly perceived as a convenient food choice, in terms of buying and creating meals, and also for social gatherings (Hoek, Luning, et al., 2011) and, due to lack of experience, meat substitutes may be perceived as less convenient (Collier et al., 2021; Weinrich, 2018). The perception of convenience is due to the familiarity that many consumers have with meat products, as opposed to meat substitutes (Collier et al., 2021). Additionally, many meat consumers concentrate on the meat aisle when shopping, and meat substitutes are usually in aisles that majority of them do not visit, and thus are not convenient (McBey et al., 2019; Vandebroele et al., 2019). Further, meat can be considered a convenient option as it is available at a majority of restaurants, whereas very few currently offer meat substitutes (Graça et al., 2015).

In addition to convenience, familiarity is a significant barrier against meat substitutes. Meat substitutes are considered to be a new food category (Hoek, van Boekel, et al., 2011), and

consumers tend to be hesitant to trial new, unfamiliar categories of food (Verbeke, 2015). Functional barriers are a possible cause for this hesitance, such as having to learn how to use and cook with the meat substitutes, and being unfamiliar with the value the product can offer (Tosun et al., 2020). In addition, Elzerman et al. (2013) found that easy preparation was seen as a positive aspect of meat substitutes. The price of meat substitutes may be a barrier for some consumers. Meat tends to be perceived as less expensive than meat substitutes, and price has been proven to be a significant determinant of consumer acceptance for most foods (Furst et al., 1996; Hoek, Luning, et al., 2011). Meat substitutes tend to be perceived as expensive in general, even if they are not necessarily more expensive than the meat they are substituting, which is a barrier against product trial (Clark & Bogdan, 2019; Collier et al., 2021; Elzerman et al., 2013).

2. Research objective

As discussed above, previous research has debated the barriers towards the adoption of meat substitutes. However, there is a lack of studies examining the specific differences between omnivores and veg*ns in these barriers to adoption. Moreover, while barriers give marketers and social marketers clues about what factors they need to address to increase uptake of meat substitutes, research has yet to fully explore the facilitators to meat substitutes. For example, only motivations such as health, environmental, and ethics for meat substitute consumption have briefly been explored. However, more insight is required to fully understand why consumers are trialling and consuming meat substitutes beyond values, by examining other factors as suggested by the Food Choice Process model such as social norms, personal factors resources, and contexts (Furst et al., 1996).

Thus, the objective of this research is to explore the facilitators, barriers and negotiations (i.e., tensions, trade-offs) that various dietary groups encounter when considering

consuming meat substitutes. We focus on vegans, vegetarians, and omnivores as each has a different relationship to meat and meat substitutes; vegans and vegetarians are meat eliminators and may use meat substitutes as a way to replace meat, while omnivores may use meat substitutes as a way to reduce meat consumption. Meat substitutes have been found to be linked to vegans and vegetarians (Michel et al., 2021), which suggests they are a significant group within this area. Meat consumers, which we refer to as omnivores, were chosen as they are a substantial market, yet their consumption of meat substitutes is reported to be relatively low (Hagmann et al., 2019). Therefore, it is necessary to explore their opinions in order to advance the meat substitute market. As such, this research contributes theoretically and practically to understanding the differences encountered by vegans, vegetarians, and omnivores when consuming meat substitutes, which has clear implications for product development and marketing.

We utilise the Food Choice Process model (Furst et al., 1996) to interpret our findings. This model has frequently been used for consumer research around food (Gorton & Barjolle, 2013) and takes into account the life course, influences, and personal systems (Furst et al., 1996). The Food Choice Process model acknowledges that, in order to comprehend an individual's food consumption patterns, their previous and current views, feelings, and actions must also be understood, as well as social and environmental factors (Köster & Mojet, 2007). We are the first meat substitute study to utilise the Food Choice Process model, enabling the research to take into account factors previously not considered or interpreted.

For the purposes of this study, meat substitutes have been defined as food products that are plant-based and designed specifically to replicate one or multiple sensory aspects of animal meat, such as appearance, taste, and texture (Clark & Bogdan, 2019; Hoek, Luning, et al., 2011; Kalocsay et al., 2020; Malav et al., 2015). This includes food products such as plant-based mince, plant-based sausages, plant-based burger patties, and plant-based chicken nuggets. This

definition does not include entirely plant-based food items that are considered a traditional alternative to meat, such as tofu, tempeh, and seitan (Kalocsay et al., 2020). These traditional alternatives have been available since 965CE, unlike meat substitutes which are a novel food category (Kalocsay et al., 2020).

3. Method

A qualitative research methodology was adopted to fulfil the research objective due to the exploratory and subjective nature of the topic. Indeed, the ability to explore experiences, beliefs, attitudes and perceptions is a key strength of qualitative research (Creswell, 2014). Focus groups were chosen as the research method as it known to be especially effective when exploring experiences, and for eliciting discussion, excitement and spontaneity (Acocella, 2012; Coule, 2013).

3.1 Participants and Recruitment

Purposeful selection was used to select and recruit participants. Purposeful, or purposive, sampling is when participants are recruited based on numerous considerations, such as the participants knowledge and experiences, research purpose, and available resources (Reybold et al., 2013). For this study, specific individuals were required based on their (a) knowledge of meat substitutes (“Must be familiar with meat substitutes”) and (b) their vegan, vegetarian or meat diet (which must have been adhered to for at least a month). Purposeful selection is used frequently in qualitative analysis and can offer deeper insight into the subject at hand (Reybold et al., 2013).

Table 1. Focus group composition

Focus group name	Number of Participants	Sex
Vegetarian A	7	5 females, 2 males
Vegetarian B	5	4 females, 1 male
Vegan A	6	4 females, 2 males
Vegan B	5	5 females
Omnivores A	7	2 females, 5 males
Omnivores B	5	4 females, 1 male

To enable homogeneity within focus groups and heterogeneity between focus groups, two separate focus groups were conducted for each dietary group in order to reach data saturation (Guest et al., 2017; Morgan, 1996). This resulted in 6 focus groups with 5–7 participants each — a total of 35 participants as can be seen in Table 1. Participant information is limited to gender. Focus groups took place in Auckland, New Zealand. Participants were recruited through social media pages and groups on veganism, vegetarianism, and Meat Free Mondays. As it was occasionally difficult to find social media pages that would allow the researcher to advertise, snowballing was used as an additional method of recruitment. Snowballing is when initial participants are found, and then these participants are asked to invite any other eligible individuals to also become participants (Parker et al., 2019). This was especially true for the omnivores, as many Facebook pages that are targeted at meat consumers were not willing to display an advertisement about a meat substitutes study. As compensation, participants were offered a \$50 supermarket voucher. The focus groups lasted between 60 and 90 minutes.

3.2 Procedures

The focus groups took place in local library private room. The same moderator conducted all focus groups. The structure of the focus group was as follows. After the researcher was introduced and the nature of a focus group was described, it was explained that the intention was to mirror a discussion between friends, rather than an interview where the participants sequentially answered questions. The guide was used to moderate the conversation and create topics of discussion. The guide included the topics: general diet, top-of-mind perceptions of meat substitutes, the current market for meat substitutes, experiences with meat substitutes, meat substitutes in comparison to meat and other meat alternatives, and finally meat substitutes in certain contexts. Packaging from certain meat substitutes were used as visual stimuli to create discussion and aid certain topics. These were used as visual methods to provide an opportunity to deeper understand participants' preferences and experiences, which is a goal of this study (Rohani et al., 2014). Participants were given the opportunity to stray slightly from the questions and freely express their thoughts; however, if the discussion became irrelevant the researcher realigned the direction of the discussion. The focus groups were audio-recorded and transcribed verbatim. Participant names were not connected to their responses to allow for anonymity (Kemper, 2020; Markowski & Roxburgh, 2019).

3.3 Analysis

The focus groups produced 346 transcribed pages. These transcriptions were then cross-checked with the audio recording to ensure all the vital parts of discussion were included. Once this was completed, each transcript was encoded using thematic analysis. Both computer typed and hand drawn notes, and mind maps were used to conduct the analysis. Comprehensive notes of all the codes and their definitions were kept in order to track quotes and coding evolution.

Nowell et al. (2017) propose that thematic analysis should be a six-phase process. Phase one is familiarising oneself with the data. Phase two is formulating the preliminary codes,

which enables the researcher to simplify the data and highlight what is relevant (Nowell et al., 2017). Through inductive coding a large number of codes were created (Linneberg & Korsgaard, 2019), which were then reduced into themes in Phase three. Phase three includes the choosing of themes from the codes (Nowell et al., 2017), which was completed by observing similarities between codes, a process known as axial coding (Vollstedt & Rezat, 2019). These themes were then reviewed in Phase four; if there was not a significant amount of data to warrant keeping a theme, either entirely or just as its own theme, themes were either discarded or merged with other themes (Nowell et al., 2017). To help relate the themes to our research objective, we tried categorising the themes under facilitators or barriers. However, we found that an additional category needed to be introduced due to the issue of the influence being a barrier and facilitator dependent on the dietary group or situation. In the fifth and final phase, the themes were used to portray the findings within the research piece (Nowell et al., 2017). Suitable quotes from the raw data were used to illustrate the claims being made, as this assists with the understanding of the findings and adds trustworthiness (Nowell et al., 2017).

1.	Facilitators
a.	Packaging and labelling
b.	Food context
	<ul style="list-style-type: none"> • takeaway • restaurant
2.	Barriers
a.	Vegan tax
b.	Lack of trust
3.	Tensions
a.	Social and culture influences
	<ul style="list-style-type: none"> • culture and upbringing • social environment • vegan and vegetarian stigma
b.	Sensory preferences
	<ul style="list-style-type: none"> • taste • texture
c.	Health and nutrition
	<ul style="list-style-type: none"> • nutritional content • processed and artificial
d.	Meat substitutes classification
	<ul style="list-style-type: none"> • marketing as ‘meat-free’ • (in)distinguishable from ‘real’ meat
e.	Familiarity and freedom
	<ul style="list-style-type: none"> • convenience • versatility • knowledge

Table 2. Themes and coding

3. Findings

3.1 Facilitators of trialling meat substitutes

There were two themes classified under facilitators of consuming and trialling meat substitutes. The facilitators are packaging and labelling, and food context, which exhibited no clear differences or contradictions between dietary groups.

3.1.1 Packaging and labelling

The appearance of the meat substitute packaging was a significant facilitator for all of the dietary groups. Omnivores and vegans in particular thought that having an image of the meat substitute on the packet was important as to prompt trial.

*“Yeah. I'd more readily buy the ones that have the pictures of the actual food.... Like [speaker 5] said, this one has a picture of a burger. That burger looks f***** good.” – Omnivores A, Speaker 2*

Further, vegans and vegetarians value having illustrations such as logos on the packaging. The illustrations most referred to were the logos displaying that the product is vegan and that it is environmentally friendly, specifically that the product has a ‘lighter footprint’. When there was no indication that the product was vegan, participants seemed frustrated, such as:

*“... I'm sure most vegans will know this. The first thing you do is start scanning for vegan. *laughter* That's what everybody does... Because a lot of times, for example, this doesn't say vegan. It doesn't say vegan anywhere.” – Vegans A, Speaker 4*

Additionally, some of the packets given to the focus groups had illustrations of the animal the meat substitute is aiming to replace. All groups found this to be strange or comedic in some way, with some saying that it may affect those who are consuming the product because of animal welfare motivations:

*Speaker 1: "I find it hilarious that it's got chicken on it. *laughs* I don't know... Especially because it's a vegan product. Vegans aren't gonna like that." ...*

Speaker 4: "I find it quite funny because they don't like harming animals, so why are they promoting it like it looks like you're eating an animal?" – Omnivores B

3.1.2 Food context

Takeaways and restaurants as food contexts were frequently discussed by all dietary groups as these settings were a common place of trial for the individuals. This was mainly due to the belief that these places create better tasting meals out of meat substitutes.

"I'd prefer to get them at a restaurant more, like the burgers at Wise Boys I like so much better than I could ever make myself..." – Vegetarian B, Speaker 4

Additionally, the omnivores and the vegans stated how once they trial a meat substitute in a restaurant or takeaway setting, they then know the meal context the meat substitute belongs to and find it easier to recreate the meal:

"... I want to eat it in a restaurant first to see what the end product is and then try replicate it at home, see how I can make it to the end product." – Omnivores A, Speaker 2

This is an interesting finding as it demonstrates how useful takeaways and restaurants can be for meat substitute brands targeting omnivores. In a sense, these settings become an educational experience for omnivores. One participant from the omnivores' focus group noted that they've only seen meat substitutes advertised by takeaway stores, which demonstrates possibly a lack of advertising in other contexts such as restaurants:

"... I can see the advertisement coming through regarding these meat alternatives but it's only through the takeaways these days, it's through Burger King... I haven't seen anything else on."

– Omnivores A, Speaker 7

3.2 Barriers to meat substitutes

There were two clear barriers identified by all participants to substitute meat consumption: the price and a lack of trust.

3.2.1 Vegan tax

The accessibility of meat substitutes also appears to be a major barrier for all participants. The perception that meat substitutes are genuinely expensive was held by all focus groups. It was an extremely prominent subtheme within this research, arising multiple times in every focus group. One participant referred to the high prices as a 'vegan tax', hence the chosen name of this subtheme. Participants often used meat and other meat alternatives as comparison products when discussing price. Due to this expensive price point, meat substitutes are viewed as a premium product, and not available for those on low incomes.

“That is what I don't like about fake meats, is that it is a very exclusive product. They're not for people who are on low budgets or people living in poverty...” – Vegans A, Speaker 3

This quote encompasses how participants view expensive meat substitutes as inaccessible for certain economic classes. Additionally, it was often stated that meat substitutes were purchased less frequently because of the price.

“... I don't personally consume them that much, due to price...” – Vegans A, Speaker 3

Clearly the price point for the majority of meat substitutes is decreasing the purchase frequency for many consumers. However, it was recognised that some meat is much more expensive than meat substitutes, such as bacon:

*“To be fair though, bacon is f***** expensive. Bacon is more expensive than that.” – Vegetarians B, Speaker 4*

Additionally, when meat substitutes were viewed as long-lasting, the high price point was reasoned for by some participants. Whether the meat substitute is viewed as expensive in terms of its benefits and replacement products clearly facilitates consumers' willingness to purchase.

3.2.2 Lack of trust

There was a lack of trust towards meat substitutes from all dietary groups. Meat substitutes were often spoken about using deceptive language, such as the words 'tricked' and 'lured'. The food product was illustrated to be untrustworthy because of its likeness to meat.

“Yeah, the first few bites I was tricked. With the breading. I got like the tenders or something... Yeah, so I got tricked on that side, but, yeah, halfway I was like, ‘Oh, I don't think it's chicken.’”
– Omnivores B, Speaker 5

Vegan participants in particular were found to prefer to buy from 100% vegan companies to ensure they can fully trust the meat substitutes that are being supplied to them. They cited being wary of anything that seemed too close to meat.

“And at the end of the day, what I like about it, that company is purely vegan. I'd rather let that company do it than one of the other companies that are a bit of everything. You trust that company more. You're not having to worry has something touched it, or I don't know.” – Vegans A, Speaker 7

This lack of trust could reflect the importance that many vegans place on their diet. The vegans' and vegetarians' focus groups often referred to what has been termed ‘vegan-washing’ (Hendricks, 2018). Similar to green-washing, this is when companies who are not 100% meat-free introduce meat substitutes solely to make money off the conscious consumer and to follow the trend. This is opposed to companies that create meat substitutes because they truly care about being meat free and supporting a vegan ideology. The vegan and vegetarian participants demonstrated a lack of trust around the intentions of companies that produce meat substitutes and are not 100% vegan:

“They are trying to steal back some of that market share, yeah. And they come out with their own vegan versions, because they all want a piece of the cake.” – Vegans A, Speaker 3

Speaker 1: “But then you realize how it's probably a meat company that owns this one and they're trying to just get more customers... So it's not like it's come from this background of like ‘oh I want to be better’”.

Speaker 4: “Of caring.”

*Speaker 1: “They're just like ‘f*** people aren't buying our s*** anymore, let's put this out’.”*

**laughter* – Vegetarians B*

This could also be part of the pursuit of maintaining a sense of authenticity. Perhaps purchasing from companies that seem to align less with their moral standing decreases their sense of authenticity concerning their dietary and lifestyle choice.

3.3 Tensions to meat substitutes

Throughout the focus groups, there were conflicting attitudes, perceptions, and expectations towards meat substitutes. Instead of being classified as barriers, these attributes are discussed as tensions because they can be considered both barriers and facilitators to meat substitutes. These tensions may help to explain why the current meat substitute literature contains conflicting findings. Specifically, social and cultural influences, sensory expectations, price, and nutritional understandings both inhibit and encourage the consumption of meat substitutes.

3.3.1 Social and culture influences

Aspects of social and cultural influences came up frequently as barriers but also as facilitators. The type of upbringing, social surroundings, and culture that individuals are exposed to can be a significant barrier to consuming and trialling meat substitutes. Participants

spoke about how the way in which they were raised influenced whether they adopted meat substitutes. Individuals who were not raised around meat, and those who have been omnivores all their lives tended to cite that this was a reason for not currently consuming meat substitutes. Vegans and vegetarians that were raised around meat used upbringing as a reason for not consuming meat substitutes as a child. Whereas now that they are adults, this social influence has less power, enabling them to overcome this barrier and consume meat substitutes.

“But I think that's why I tend to not eat as much meat substitutes, because I had never had meat and I had never grown up having anything...” – Vegans B, Speaker 6

An individual's chosen dietary group has an effect on how they are perceived, but also how food that aligns with their dietary choices are perceived. Vegan and vegetarian stigma was identified by all focus groups. The stigma referred to these individuals being too forceful with their beliefs, and preventing others from adopting the same diet as there is too much judgement. The stigma attached to these dietary groups negatively seeps into meat substitutes, which are associated with vegans and vegetarians. Both omnivores and vegetarians cited how people who are not vegan or vegetarian may reject meat substitutes solely because they are categorised as a vegan or vegetarian food. Omnivores in particular discussed wanting to avoid meat substitutes because of vegan protests that they have witnessed.

However, all dietary groups acknowledged that they trial and consume meat substitutes within social settings. For vegans and vegetarians, they would bring meat substitutes to social settings with them. This not only supplied them with a meal, but also created a sense of inclusion when around omnivore counterparts. For omnivores, this was usually in the context of visiting vegan or vegetarian friends or family, or having them over as guests. The vegan or vegetarian would

either supply the meat substitutes, or as a way of making their guests feel included, the omnivores would supply the meat substitutes. In this way, social situations may act as a facilitator to eating meat substitutes. Further, they stated how meat substitutes help to create this feeling of inclusivity. As meat substitutes mock meat, when people who choose not to consume meat are present in social gatherings where food is involved, they can feel as though they are included.

“... it's nice to have these other products to make everyone feel included... And they can have something, and it's similar to what everyone else is eating.” – Omnivores B, Speaker 1

Culture also had a significant role in creating a barrier towards the trial and consumption of meat substitutes. It was explained various times how Western culture has created the ideal meal of ‘meat and two–three veg’:

“I think that’s quite true, too, culturally for New Zealanders. Your meal is meat and three veg...” – Omnivores B, Speaker 3

Participants discussed how meat has a very prominent role within Western culture. Conversely, other cultures such as the Indian culture have various popular dishes that do not include meat. This meant that participants who originated from India or who were raised in this culture were familiar with dishes that do not contain meat. Hence, they do not struggle to create meals without meat, or a meat substitute.

“... how in the [Indian] cuisine you make, it's so flavourful and there's so many option ... I find most Western food really boring and bland. I think because we consume, generally, a lot of

meat and animal products, that's what gives a lot of Western food flavour..." – Vegan A, Speaker 3

3.3.2 Sensory preferences

The sensory aspects of meat substitutes were seen to be an integral facilitator to adoption for all dietary groups. Aspects such as texture, taste and appearance were cited as important when choosing to trial a meat substitute, and whether the meat substitute was enjoyable or not.

"... and texture is huge. Especially like some people are really, really particular. People will not like specific foods because they don't like the texture... So I feel like it would be quite a big impact." – Vegetarians B, Speaker 4

Tension happens between dietary groups as they have different expectations and preferences for the sensory (taste, texture, appearance) of meat substitutes. All dietary groups perceived taste to be important when trialling meat substitutes. All dietary groups discussed how some meat substitutes do a very impressive job of mocking real meat, while others do not compare so well. Both omnivores and vegetarians claimed that they've had experiences where they could not tell that they were not eating meat when trialling some meat substitutes.

Speaker 3: "I had some plant based sausages, and I didn't know that they weren't real sausages. They told me after I started eating them."

Speaker 4: "Yeah, and then you're like, your brain goes, "This definitely isn't meat," but initially just eating it, you can be tricked."

Speaker 3: "And actually I couldn't have told the difference, they actually were pretty good."
– Omnivores B

Conversely, vegans and vegetarians discussed how some meat substitutes were too realistic, so much so that it created a negative experience. When meat substitutes were perceived as too realistic, participants often spoke about them in a negative tone.

Speaker 5: "... And even those Beyond Meat burgers, they're just too real now, you know?..."

Speaker 4: "Yeah, how they bleed and stuff." – Vegetarians B

Further, one participant even stated that they stopped consuming the meat substitute, feeling as though it is too similar to real meat:

"I stopped eating it throughout the six months because to me, it started tasting like chicken, so I couldn't do it..." – Vegans A, Speaker 7

For omnivores, claiming that a meat substitute was realistic was always expressed with positive emotions. Whereas for the vegans and vegetarians, there was mixed attitudes about the realistic sensory aspects of meat substitutes with most uncomfortable about it mimicking meat.

Additionally, omnivores often discussed meat substitutes having multiple negative sensory aspects while comparing them to meat. Conversely, the vegans and vegetarians generally only discussed meat substitutes in comparison to real meat when citing that they lack the texture of real meat. However, this was not always considered to be a negative thing, unless the meat substitutes were considered dry. Omnivores in particular discussed having a negative perception towards the sensory aspects of meat substitutes they had either seen, heard about,

or trialled. Omnivores compared meat substitutes to meat and believed there were poor sensory factors in terms of taste and appearance:

Speaker 3: "Expensive and tasteless."

Speaker 5: "They don't even look that good." – Omnivores A

3.3.3 Health and nutrition

While health and nutrition can be considered as a facilitator, within this study it was often perceived paradoxically. The tension occurred not only between dietary groups but also within individuals' minds. Although the idea of a product that is meat-free was often perceived as healthy, it was also perceived as unhealthy and over processed. This illustrates a tension that is present around meat substitutes.

The vegans and vegetarians both stated that health is an important consideration for them when looking for meat substitutes to trial. Meat substitutes were commonly viewed as a treat, which was something these participants would indulge in now and then. This is opposed to them being an integral part of their diet. While this was not prominent for the omnivores, all dietary groups cited that the ingredients of a meat substitute is important to them. There was a clear tension between protein and soy in particular, which were frequently brought up by all dietary groups. Protein was a desired ingredient as it is viewed as an integral aspect of a healthy diet, while soy was discussed in a more negative manner, in terms of health and environmental concerns.

“Well it would come down to the amount of protein you're getting, like does it have the same amount of protein as you would get in meat? Because that would be a big thing...” – Omnivores B, Speaker 6

“Obviously I like less soy in them, like more available that don't have soy in them that still taste good, but that's a lot to ask... Just because of estrogen, because soy is like estrogen.” – Vegetarians A, Speaker 3

The dietary groups differed in how they perceived meat substitutes as fulfilling essential elements of a diet, such as being filling and having enough nutrition. This demonstrates another key tension. The omnivores perceived meat substitutes as not being able to fulfil these elements, while the vegans and vegetarians discussed how they do. Further, omnivores claimed that they perceive meat to be healthier than meat substitutes.

“This is pretty healthy, but I've seen some products that I don't even know half the ingredients, so I'd rather just consume some meat as opposed to the product, because it isn't that healthy.” – Omnivores B, Speaker 1

Paradoxically, omnivores also perceive meals that do not include meat as healthier. This is where health and nutrition becomes a tension within an individual's mind, as opposed to between dietary groups.

Vegans and vegetarians also stated that they perceive meat substitutes to be healthier than meat. However, both groups claimed that other plant proteins such as tofu, falafel and tempeh are healthier than meat substitutes. This positions meat substitutes in a nutritional middle ground between meat and more natural vegan alternatives.

All dietary groups held the perception that meat substitutes are a processed food. They would use words such as ‘processed’ and ‘artificial’ to describe meat substitutes. This could be because the product is meant to replicate meat, which is perceived as a single food component. Whereas, meat substitutes are created by using multiple food components.

Speaker 2: “I think that they’re all extremely processed.”

Speaker 8: “Very processed.”

Speaker 5: “They have to be.” – Omnivores A

Additionally, the vegetarian and meat consumer groups discussed how they imagine meat substitutes to be created in a laboratory setting. When asked about their familiarity with the process used to create meat substitutes, a vegetarian participant responded:

*“I just imagine like lab coats...” *laughter* – Vegetarian B, Speaker 5*

Some participants stated that they try to limit their intake of meat substitutes as they are processed. This shows how this perception can help to facilitate purchase intention.

3.3.3 Meat substitutes classification

As meat substitutes only mock real meat, there is a distinct gap between real meat and meat substitutes. While this gap is impossible to completely close, some meat substitutes are closer to genuinely mocking real meat than others. However, this study has found that meat substitutes being as close to real meat as possible is debated, and consumer views contradict one another.

The concept of meat substitutes being marketed as ‘meat-free’ and as a non-meat meat product was a topic of discussion that arose for all dietary groups. Omnivores conveyed the

belief that meat substitutes should be marketed as their own food group entirely, and marketers should avoid comparisons to meat. Omnivores and vegetarians both stated how an expectation is created when a meat substitute is compared to meat. For example, if a meat substitute is compared to chicken, there is an automatic expectation from the consumer that the product should have the same sensory aspects as chicken. When an expectation is created, participants identified how it is easier to be disappointed, as the gap between meat and meat substitutes is not completely closed:

Speaker 3: "I feel like all of these products are always trying to be meat. So potentially they'll always be slightly worse than meat if meat is your standard of taste. Rather than products just be what they are and they're nice or whatever. Like this is trying to be chicken."

Speaker 4: "Yeah, they're trying to emulate something. It's never going to be exactly that. By that definition it can't be as good." – Vegetarians A

Further, omnivores often held the perception that meat substitutes should not be marketed as meat-free and that they did not like the concept. When omnivores were asked what they think about meat substitutes being formulated and marketed to be as close to meat as possible, their responses included:

Speaker 5: "I don't like that."

Speaker 3: "I don't like that at all."

Speaker 2: "It's pointless."

Speaker 3: "Pointless." – Omnivores A

In contrast, the vegans and vegetarians recognised that marketing meat substitutes as 'meat-free' is controversial; however, they believe that it is important for informational and descriptive purposes. It was discussed how giving meat substitutes names similar or the same as meat helps consumers to know meal context.

"I guess it's also indicating how to use it. Like you were using in the place... So you can kind of have an idea of what it's for." – Vegans B, Speaker 3

3.3.4 Familiarity and freedom

Familiarity versus freedom appears to be a significant negotiation between desiring convenience and familiarity with meat substitutes, but also wanting freedom and versatility around food. The benefit of convenience and familiarity was significant for all dietary groups. This was in terms of motivation for both their chosen diet and for trialling meat substitutes. Vegans and vegetarians perceive meat substitutes as convenient, whereas omnivores believe that their choice to consume meat as opposed to meat substitutes is more convenient.

"I feel like maybe I'd be more likely to have it at home for the whole convenience thing. Just grab it out of the freezer. Cook it." – Vegetarians A, Speaker 5

"I feel like preparing vegetables can take a lot longer as well, if you're just going to make a veggie dish... whereas meat and veg, you kind of just cook the meat then just chuck the veggies on, grab the steamer, and then you're done." – Omnivores B, Speaker 1

As meat substitutes are still a relatively new food product, all dietary groups stated that there are aspects of meat substitutes that are still unfamiliar to them, which is an essential barrier to overcome. This included the cooking techniques, process in which they are made, and the product in general.

*“... And they're like, 'What's in it? What's that made of?' I'm like, 'F***, I don't know. I haven't even thought about it. I just like this tastes good.’” – Vegetarians B, Speaker 4*

Moreover, omnivores were especially unfamiliar with meat substitutes, and throughout both focus groups clarification on what foods are classified under meat substitutes was frequently asked for. However, this did not occur in the vegan or vegetarian focus groups. The omnivores often asked for clarification around whether jackfruit and tofu were classified as meat substitutes:

“When you say meat substitute, does that include like... what did [name] make us? We thought it was meat... Jackfruit, is that included in meat substitutes?” – Omnivores B, Speaker 1

Due to this unfamiliarity with meat substitutes, meat is often used as a reference point. Aside from the few participants who have never consumed meat, the groups claimed that they mirror their meat habits to their meat substitute habits. For example, cooking techniques for chicken were kept for cooking the chicken meat substitutes. Also, shopping habits for meat were not changed for meat substitutes:

“... I don't really buy frozen meat. We don't really buy frozen stuff, so I probably wouldn't actually buy those [frozen meat alternative].” – Omnivores B, Speaker 1

Additionally, vegetarians and vegans tend to gravitate towards meat substitutes that replicate meat they used to enjoy, and avoid meat substitutes that replicate meat that they did not consume as much. For example, if they did not eat red meat as a meat consumer, they usually avoid or buy less of meat substitutes that mock red meat.

“...like when I did eat meat, I really liked chicken. But I obviously don't really want to eat that anymore, but something similar...” – Vegetarians B, Speaker 3

Despite the desire for convenience and familiarity, the food freedom came up for every dietary group. Discussions about the importance of the versatility of food arose frequently. The omnivores and vegetarians also discussed how having freedom with food was significant to them. For example, the vegetarians stated how they could not go vegan because of that particular diet being too restrictive, illustrating the value of food freedom. Conversely, the omnivores spoke of not going vegetarian because of the food restrictions.

Speaker 4: “Yeah, and also I don't really want to cut my palette down to just this type of food. I want to just be able to eat everything...”

Speaker 6: “It's good to just have days where like I'll just go vegetarian today.”

Speaker 5: "Because that's a big thing as well, because especially when this first became a thing, or became more known, just like the pressure of having to go straight into vegetarian or not." – Omnivores B

This idea of flexibility related to meat substitutes, as they were not usually viewed as versatile, whereas other vegan alternatives such as tofu and tempeh, and meat were.

Speaker 2: "Yeah, because you can do ... A lot of them nowadays, the meat substitutes you used to buy in the supermarket, already made for a certain thing whereas if you're buying meat, you buy like a burger patty, you can make it into meatballs whereas if you buy a meat-free burger patty, you can't make it into meatballs. You can't, it's very ridged in what you can do with it."

Speaker 6: "No versatility." – Omnivores A

The vegans and vegetarians both spoke positively about the advancements in meat substitutes and how there is so much more selection now than in the past decade. These two groups also spoke about trialling meat substitutes out of curiosity when a new one is released. Variety is clearly valued by these groups, emphasising the importance of food freedom.

"Yeah. I think it's wonderful that there's heaps of vegan fake meat options out there, because I remember when I first went vegan, you couldn't buy fake meat in the supermarkets." – Vegans A, Speaker 3

4. Discussion

Meat substitutes can play a significant role in helping to reduce individuals' meat consumption as they are considered to be a favourable alternative to meat, providing various health, environmental, and ethical benefits (Apostolidis & McLeay, 2016; McBey et al., 2019). The objective of this research was to explore the facilitators, barriers and negotiations that vegans, vegetarians, and omnivores encounter with meat substitutes. A unique aspect of this research is that it considers various dietary groups that are potential target markets for meat substitutes. Few studies on meat substitutes have explicitly included multiple dietary groups within the research, and those that have tend to use quantitative research methods (i.e. Clark & Bogdan, 2019; Elzerman et al., 2021; Hoek et al., 2004; Lemken et al., 2019). Qualitative research allows us to dig deeper into facilitators, barriers and tensions encountered when consuming meat substitutes. The research demonstrates how there can be no 'one-size-fits-all' approach to the marketing of meat substitutes, and aspects of taste, appearance, packaging and accessibility differ between dietary groups. Overall, by comparing and contrasting the facilitators, barriers, and negotiations of different dietary groups this study contributes a comparative, and more holistic research viewpoint on meat substitutes. This study provides a basis on which future studies can expand on by exploring other significant dietary groups – these may include flexitarians and pescatarians.

To further draw out the significance of our findings, we utilise the Food Choice process model to interpret our results (Furst et al., 1996). Figure 1 displays the themes and their relationship to the Food Choice process model; we highlight under which food choice category each theme belongs as well as identifying them as a facilitator, barrier or tension. We highlight key facilitators across all dietary groups such as resources (packaging and labelling) and food context (restaurants, takeaways), and barriers such as the vegan tax (high price) and lack of trust. Our analysis also displays a clear tension between many influences in food choice such

as ideals and personal factors (Furst et al., 1996). We consider these tensions to involve factors which are both a barrier and enabler, dependent on individuals and their dietary identity. These tensions result in the influences, which include sensory preferences, meat substitutes classification, health perceptions, social/culture, being both facilitators and barriers dependent on the dietary group. A main value negotiation was also exhibited by all dietary groups, balancing familiarity with food/meal freedom and versatility.

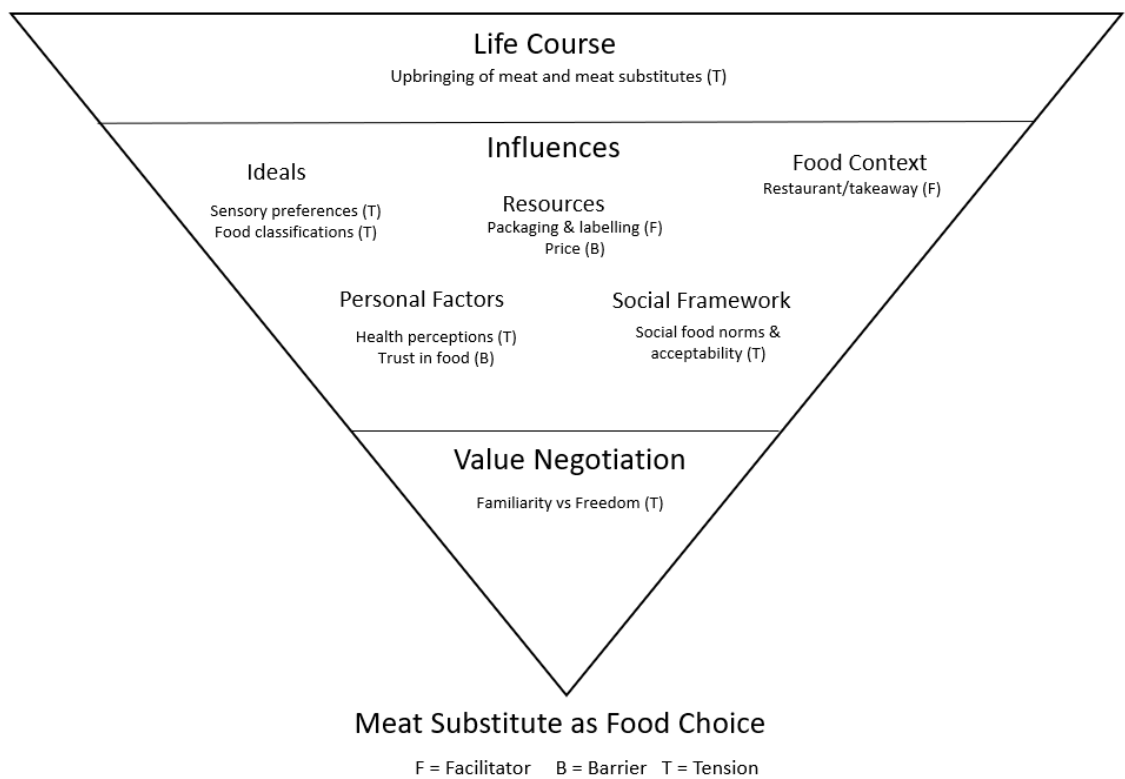


Figure 1. Food choice process model for meat substitutes

Labelling and information on packaging as a resource were seen as key facilitators to buying meat substitutes, and there were no conflicting preferences between the dietary groups. Information on packaging has been known to have an effect on consumer food choices and preferences (Martin et al., 2021), providing consumers the resources for food selection (Furst et al., 1996). We found that omnivores and vegans liked having an image of the meat substitute

on the packet. In general, having an image of the food on the packaging in general has been found to attract consumer attention, increase purchase intentions and create expectations around the product (Gofman et al., 2009; Mizutani et al., 2010; Schifferstein et al., 2013). Vegans and vegetarians also valued vegan and carbon footprint logos and certifications. A lack of information on the packaging of meat substitutes is perceived as a negative thing (Elzerman et al., 2013), supporting the importance of logos and certifications, which can act as heuristics. Martin et al. (2021) discovered that additional information, namely about both health and environmental impact, on the packaging of meat substitutes can help to increase purchase preference and willingness to purchase in meat consumers. However, they also found that having a ‘vegetarian’ logo on the product symbolised different concepts dependent on the individual (Martin et al., 2021). In our study, the use of logos and certifications were perceived as helpful only to vegans and vegetarians, implying that omnivores may not be concerned with certain informational aspects on the packaging. In contrast, Clark and Bogdan (2019) found that while most consumers rely on food package labels, there is a lack of trust in them and they are not associated with a willingness to trial meat substitutes. This may be a result of labels not being perceived as credible, and not providing the information that consumers are interested in. Interestingly, all groups found images of the animal being substituted for to be strange or comedic, even though this is common practice in the marketplace.

One key facilitator of meat substitutes was the trialling of meat substitutes at takeaways and restaurants. Restaurants may provide the meal context, which has a large effect on whether a meat substitute is enjoyed (Elzerman et al., 2011). Companies seem to realise this as well as, for example, The Impossible Burger was first launched only in restaurants in order to maintain quality, context, and gain brand awareness before selling in supermarkets (James, 2019). Restaurants can become an educational experience for omnivores, mimicking restaurants that educate individuals on food waste (e.g., Instock) and nose to tail dining (Cai et al., 2021). Fast-

food chains and restaurants have been cited as playing a vital role in spreading awareness of meat substitutes because of their reach and advertising capacity (Piper, 2021). Therefore, the predominance of trialling meat substitutes within these settings may be due to the high level of advertising done by takeaways and restaurants. This suggests that exploring the setting in which meat substitutes are consumed would be a worthwhile avenue of research. For example, Vandebroele (2019) found that nudging techniques, such as increasing visibility and offering them in pairs with meat-based counterparts, works to increase the purchase of meat substitutes in a butchery. There is also recent research that examines communication strategies to make plant-based menu items more attractive (Ye & Mattila, 2021).

There were two key barriers for all participants: price and lack of trust. The complex nature of meat substitutes, particularly their manufacturing, meant there was a lack of trust. This was directed at the product itself and the information circulated by the brand; this has been determined to be a significant barrier against trial in prior studies (Banovic et al., 2018; McBey et al., 2019). Conversely, Tosun et al. (2020) discovered that trust is a purchasing motivator for consumers of meat substitutes. Perhaps food neophobia could explain individuals' lack of trust towards new food products such as meat substitutes (e.g. Schickenberg et al., 2008; Siegrist et al., 2013; Verbeke, 2015). The issue of trust was also a more major issue for vegans as they wanted authentic purpose-driven companies selling meat substitutes. It may be considered 'vegan-washing' when companies who are not 100% meat-free introduce meat substitutes only to make profit off the conscientious consumer rather than a purpose-driven company with vegan values, for example ethical or environmental (Vredenburg et al., 2020). Vegans tend to have strong beliefs around their diet, vegan lifestyle is a part of an individual's identity (Greenebaum, 2012), as opposed to vegetarians (Rosenfeld, 2018), which could be a reason why this was a pattern for vegans but not vegetarians and omnivores. The vegan tax, also classified as a (economic) resource, was seen as significant barrier. Such reflections on high

price is common in all meat substitute studies (Clark & Bogdan, 2019; Collier et al., 2021; Elzerman et al., 2013). High price can be addressed through economies of scale once sales of meat substitutes increase, and through marketing and labelling considerations to value (e.g. nutrition, carbon usage).

Our research highlights the impact of culture and the social environment as mainly barriers but also partly as facilitators, demonstrating the importance of background (life course), social norms, and social setting (influences) in food choice (Furst et al., 1996). Commonly, ‘meat and two–three veg’ is the traditional, ideal meal in Western countries, as established by the British (Junor, 2016; North & Emmett, 2000). As the agriculture sector and meat consumption both have such a noteworthy role in New Zealand culture, there is expected resistance towards meat substitutes (Clarkson et al., 2018). Conversely, cultures such as the Indian culture have a prevalence of vegetarianism, which is predominantly due to upbringing and religion (Ruby et al., 2013). In this way, meat substitutes had symbolic meanings (Furst et al., 1996) of ‘not normal’ in the New Zealand culture. Social norms have a significant influence on dietary choices, either positively or negatively influencing a specific choice such as meat reduction (Cheah et al., 2020). The influence of social influences on meat substitutes have also been witnessed in other studies, such as Elzerman et al. (2013) and Hoek et al. (2004). While we found social and cultural influences to be mainly a barrier for meat substitute consumption, we also found, like other research has, that consumers were likely to trial meat substitutes in social situations. For example, because of a social influence or connection, such as a flatmate or house guest that follows a vegetarian diet (Elzerman et al., 2013; Hoek et al., 2004). Further, we find that meat substitutes have previously be coined as ‘social instruments’, allowing vegans and vegetarians to feel included in social situations where meat tends to be dominant, such as barbeques and Christmas gatherings (Nath & Prideaux, 2011). While our research did not examine traditional meat substitutes, research shows that chickpeas and nuts are generally

considered more appropriate to be served in all situations than the meat substitutes (Elzerman et al., 2021). Thus, a comparison of meat substitutes that mimic meat, those that don't, and traditional meat substitutes, would be of interest in future research.

The ideals of sensory expectations and preferences, and food (meat substitute) classifications highlighted clear differences between dietary groups. As such, these factors were found to be both a barrier and facilitator (tension) for consumption of meat substitutes. Our research and previous research has found that meat consumers are significantly influenced by sensory aspects of food, namely taste and appearance (Hoek, Luning, et al., 2011). Vegan, vegetarian and omnivores' ideals, expectations, and standards about how meat substitutes should taste, differed (Furst et al., 1996). Our findings of these intrinsic food characteristics (Brečić et al., 2017) presents a challenge to meat substitute companies as they have to cater to different dietary groups requirements and preferences. While sensory aspects tend to be less important for vegans and vegetarians, some in this group are deterred by the sensory aspects of meat and therefore would not want a meat substitute that has sensory aspects similar to that of meat (Hoek, Luning, et al., 2011; Ruby & Heine, 2011). In contrast, omnivores frequently compared meat substitutes' taste, texture and appearance to meat and were often disappointed about meat substitutes, and surprised when they were enjoyed. Thus, omnivores were often more apprehensive and critical of meat substitutes, wanting them to mimic meat (Hoek, Luning, et al., 2011). Such 'meat-like' preferences may be because individual's perceived familiarity with a food (in this case, meat) is a significant contributor to the adoption of the food (Collier et al., 2021; Fenko et al., 2015). Similarly, there is disagreement about the idea of considering meat alternatives as 'real' meat ('meat free', 'meatless') (Croll, 2021). Our findings suggest that while omnivores disagree with marketing food as 'meat-free', vegans and vegetarians tend to find it useful for informational purposes. While the controversy around the marketing of meat substitutes has not been widely studied, Lemken et al. (2019) partially

explored marketing legume meat substitutes as ‘meat free’. They found that consumers would consider adopting processed food products that contain legumes if they are not marketed specifically as a meat substitute (Lemken et al., 2019). Future research is needed to examine ‘meat free’ marketing practices further, especially considering recent court rulings and legal battles for use of ‘meat’ names on plant based products (Bánáti, 2020).

The research also found tensions in health perceptions, with all dietary groups seeing them as a barrier and facilitator to consumption of meat substitutes to various degrees. Specifically, there were differences of opinion between health and nutrition and the perceived ultra-processed nature of meat substitutes; this tension was seen between dietary groups but also within individuals (in this case, contradictions). Omnivores perceived meat substitutes as not being filling or having enough nutrition, while the vegans and vegetarians believed they were both, especially because of the protein contents. However, all groups perceive meals that do not include meat as healthier, but that other plant proteins such as tofu, falafel and tempeh are healthier than meat substitutes. Vegans and vegetarians also view meat substitutes as ‘treat’ food. Yet omnivores also claimed that they perceive meat to be healthier than meat substitutes because of its unprocessed nature and the substitutes’ use of soy. Such a tension between perceptions of health in meat and meat substitutes is seen in other research (Collier et al., 2021; Kemper, 2020). The specific aspects that create this perception tend to be an extensive and complicated ingredients list, the taste and the process by which it is made (Circus & Robison, 2019; Tosun et al., 2020; Weinrich, 2018).

Lastly, familiarity was privileged, yet freedom of food was desired. This value negotiation involved the weighing of the different considerations of familiarity and freedom in making food choices (Furst et al., 1996). While consumers value food freedom, they also rely on the convenience and familiarity that meat can offer. This is a noteworthy negotiation, and could yield interesting results if explored in future studies as this has not yet been well

researched. Familiarity is based on an individual's resources, such as skills and time (Sobal & Bisogni, 2009). Traditional eating habits tend to be fixed, making it more difficult for individuals to change (Weinrich, 2018). New Zealand has deep-rooted associations with animal agriculture and meat production (Potts & White, 2008), thus consuming meat can be considered a traditional eating habit. Meat substitutes allow participants to maintain their meat habits while allowing for the reduction or elimination of meat. Psychologically, humans tend to prefer having choice and some sort of agency (Reed et al., 2012). As well as choice, Nicolosi et al. (2019) discovered that consumers favour versatility when purchasing a product (such as cheese). An individual's need for choice and versatility can explain why certain diets that restrict the types of food one can consume and food products that are perceived as less versatile are unattractive. However, the paradox of choice must also be considered, as if there are too many options, there may be a decrease in satisfaction (Reed et al., 2012). This implies that there is an optimal amount of freedom and choice that individual's desire, but there are tensions and negotiations between these two values.

Managerial Implications

Our research explores the various facilitators and barriers which impact vegans, vegetarians and omnivores when consuming meat substitutes. The research also finds that there are clear tensions between some of these barriers and facilitators which are encountered depending on which dietary group consumers belong to. As a result, meat substitute producers and marketers must clearly balance the needs and preferences of dietary groups when creating meat substitutes. This may result in producing varied types of meat substitutes such as those that differ in taste and sensory aspects (e.g. mimicking meat, bleeding like meat), and those that are marketed as 'meat-free'. For all meat substitutes regardless of target market, producers and marketers should make packaging and labelling a priority, including the use of logos and

certifications related to veganism and carbon foot printing. Marketing meat substitutes as ‘meat-free’ or ‘meat-less’ should be further investigated and considered dependent on target market. Furthermore, our research suggests that there are linkages between communicated brand values (about veganism for example) and consumers’ willingness to trust and purchase behaviours. The need to be authentic in communicating brand values is of increasing import to consumers (Vredenburg et al., 2020), and food marketers for meat substitutes must take heed. Similarly, meat substitutes should be heavily promoted in business-to-business sales to ensure restaurants, cafes and takeaway stores are purchasing and serving meat substitutes. Efforts should be made to overcome barriers such as perceptions of social and cultural norms, nutritional aspects of meat substitutes and high price. These barriers may be in part addressed through a wider use in restaurants and information on packaging and marketing (e.g., health star ratings).

Limitations

As with all qualitative research our findings are not generalisable. However, the nature of the study called for an exploratory qualitative approach, providing rich and in-depth insight into the phenomena of interest (Creswell, 2014). Our findings can be translated into a larger, quantitative study, such as a nationally representative survey or an experiential design to test advertising messages or product placements in (online) supermarkets. Future research could measure the relationship of the factors identified in the study and how they may have a long term impact on attitudes and behaviours. Another limitation was that the sampling was skewed very much towards (white) females, especially in the vegan and vegetarian focus groups, while the omnivores focus groups had more gender balance. Such sampling is not unusual in qualitative and quantitative research on plant-based and meat reduction studies (e.g., Costa et al., 2019; Haverstock & Forgays, 2012; Kemper, 2020; Markowski & Roxburgh, 2019), but

does raise issues around providing a more balanced gender view. Future research should specifically explore any differences between genders and/or provide a more balanced sampling approach. Lastly, considering the study was conducted during the COVID-19 pandemic it would be very interesting to see whether the sometimes dramatic changes in food consumption and shopping habits (Eftimov et al., 2020) had an impact on plant-based eating and consumption of meat substitutes.

References

- Acocella, I. (2012). The focus groups in social research: Advantages and disadvantages. *Quality & Quantity*, 46(4), 1125–1136. <https://doi.org/10.1007/s11135-011-9600-4>
- Aiking, H. (2011). Future protein supply. *Trends in Food Science & Technology*, 22(2–3), 112–120. <https://doi.org/10.1016/j.tifs.2010.04.005>
- Apostolidis, C., & McLeay, F. (2016). Should we stop meating like this? Reducing meat consumption through substitution. *Food Policy*, 65(2016), 74–89. <http://dx.doi.org/10.1016/j.foodpol.2016.11.002>
- Bánáti, D. (2020). Veggie burgers, vegan meats? The ruling of the European Parliament paved the way for meat substitutes with meat denominations. *Journal of Food Investigation*, 66(4), 3166–3243.
- Banovic, M., Arvola, A., Pennanen, K., Duta, D. E., Brückner-Gühmann, M., Lähteenmäki, L., & Grunert, K. G. (2018). Foods with increased protein content: A qualitative study on European consumer preferences and perceptions. *Appetite*, 125, 233–243. <https://doi.org/10.1016/j.appet.2018.01.034>
- BCC Research. (2020). *Plant-based Meat: Global Markets* (No. FOD098A). BCC Research LLC. <https://academic-bccresearch-com.ezproxy.auckland.ac.nz/market-research/food-and-beverage/plant-based-meat-market.html>

- Bogueva, D., Marinova, D., & Raphaely, T. (2017). Reducing meat consumption: The case for social marketing. *Asia Pacific Journal of Marketing and Logistics*, 29(3), 477–500. <https://doi.org/10.1108/APJML-08-2016-0139>
- Bouvard, V., Loomis, D., Guyton, K. Z., Grosse, Y., Ghissassi, F. E., Benbrahim-Tallaa, L., Guha, N., Mattock, H., & Straif, K. (2015). Carcinogenicity of consumption of red and processed meat. *The Lancet Oncology*, 16(16), 1599–1600. [https://doi.org/10.1016/S1470-2045\(15\)00444-1](https://doi.org/10.1016/S1470-2045(15)00444-1)
- Brečić, R., Mesić, Ž., & Cerjak, M. (2017). Importance of intrinsic and extrinsic quality food characteristics by different consumer segments. *British Food Journal*.
- Brunton, C. (2019). *Hungry for Plant-Based: New Zealand Consumer Insights* (p. 7). Food Frontier. <https://www.foodfrontier.org/wp-content/uploads/2019/10/Hungry-For-Plant-Based-New-Zealand-Consumer-Insights-Oct-2019.pdf>
- Cai, C. H., Ding, A., & Legendre, T. S. (2021). Exploring persuasive sales techniques to improve customer acceptance of sustainable but unfamiliar menu in restaurants. *International Journal of Contemporary Hospitality Management*.
- Cheah, I., Sadat Shimul, A., Liang, J., & Phau, I. (2020). Drivers and barriers toward reducing meat consumption. *Appetite*, 149, 104636. <https://doi.org/10.1016/j.appet.2020.104636>
- Circus, V. E., & Robison, R. (2019). Exploring perceptions of sustainable proteins and meat attachment. *British Food Journal; Bradford*, 121(2), 533–545. <http://dx.doi.org.ezproxy.auckland.ac.nz/10.1108/BFJ-01-2018-0025>
- Clark, L. F., & Bogdan, A.-M. (2019). Plant-based foods in Canada: Information, trust and closing the commercialization gap. *British Food Journal*, 121(10), 2535–2550. <https://doi.org/10.1108/BFJ-12-2018-0826>

- Clarkson, C., Miroso, M., & Birch, J. (2018). Consumer acceptance of insects and ideal product attributes. *British Food Journal*, *120*(12), 2898–2911.
<https://doi.org/10.1108/BFJ-11-2017-0645>
- Collier, E. S., Oberrauter, L.-M., Normann, A., Norman, C., Svensson, M., Niimi, J., & Bergman, P. (2021). Identifying barriers to decreasing meat consumption and increasing acceptance of meat substitutes among Swedish consumers. *Appetite*, *105*643.
- Costa, I., Gill, P. R., Morda, R., & Ali, L. (2019). “More than a diet”: A qualitative investigation of young vegan Women’s relationship to food. *Appetite*, *143*, 104418.
- Coule, T. (2013). Theories of knowledge and focus groups in organization and management research. *Qualitative Research in Organizations and Management: An International Journal*, *8*(2), 148–162. <https://doi.org/10.1108/QROM-09-2011-1006>
- Creswell, J. W. (2014). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches* (4th ed.). SAGE Publications, Ltd.
- Croll, C. (2021). *Vegetarian or Meatless, does it matter?: To what extent do word choice and motivation type on the packaging of meat substitutes influence the buying behaviour of the consumer.*
- de Boer, J., Helms, M., & Aiking, H. (2006). Protein consumption and sustainability: Diet diversity in EU-15. *Ecological Economics*, *59*(3), 267–274.
<https://doi.org/10.1016/j.ecolecon.2005.10.011>
- Eftimov, T., Popovski, G., Petković, M., Seljak, B. K., & Kocev, D. (2020). COVID-19 pandemic changes the food consumption patterns. *Trends in Food Science & Technology*, *104*, 268–272.

- Elzerman, J. E., Hoek, A. C., van Boekel, M. A. J. S., & Luning, P. A. (2011). Consumer acceptance and appropriateness of meat substitutes in a meal context. *Food Quality and Preference*, 22(3), 233–240. <https://doi.org/10.1016/j.foodqual.2010.10.006>
- Elzerman, J. E., Keulemans, L., Sap, R., & Luning, P. A. (2021). Situational appropriateness of meat products, meat substitutes and meat alternatives as perceived by Dutch consumers. *Food Quality and Preference*, 88, 104108. <https://doi.org/10.1016/j.foodqual.2020.104108>
- Elzerman, J. E., van Boekel, M. A. J. S., & Luning, P. A. (2013). Exploring meat substitutes: Consumer experiences and contextual factors. *British Food Journal*, 115(5), 700–710. <https://doi.org/10.1108/00070701311331490>
- Fenko, A., Backhaus, B. W., & van Hoof, J. J. (2015). The influence of product- and person-related factors on consumer hedonic responses to soy products. *Food Quality and Preference*, 41, 30–40. <https://doi.org/10.1016/j.foodqual.2014.11.009>
- Feskens, E. J. M., Sluik, D., & van Woudenberg, G. J. (2013). Meat Consumption, Diabetes, and Its Complications. *Current Diabetes Reports*, 13(2), 298–306. <https://doi.org/10.1007/s11892-013-0365-0>
- Furst, T., Connors, M., Bisogni, C. A., Sobal, J., & Falk, L. W. (1996). Food Choice: A Conceptual Model of the Process. *Appetite*, 26(3), 247–266. <https://doi.org/10.1006/appe.1996.0019>
- Gofman, A., Moskowitz, H. R., Fyrbjork, J., Moskowitz, D., & Mets, T. (2009). Extending Rule Developing Experimentation to Perception of Food Packages with Eye Tracking. *The Open Food Science Journal*, 3(1), 66–78. <https://doi.org/10.2174/1874256400903010066>

- Gorton, M., & Barjolle, D. (2013). Theories of Food Choice. In D. Barjolle, M. Gorton, J. Milošević Đorđević, & Ž. Stojanović (Eds.), *Food Consumer Science* (pp. 15–26). Springer Netherlands. https://doi.org/10.1007/978-94-007-5946-6_2
- Graça, J., Oliveira, A., & Calheiros, M. M. (2015). Meat, beyond the plate. Data-driven hypotheses for understanding consumer willingness to adopt a more plant-based diet. *Appetite*, *90*, 80–90. <https://doi.org/10.1016/j.appet.2015.02.037>
- Greenebaum, J. (2012). Veganism, Identity and the Quest for Authenticity. *Food, Culture & Society*, *15*(1), 129–144. <https://doi.org/10.2752/175174412X13190510222101>
- Grunert, K. G. (2006). Future trends and consumer lifestyles with regard to meat consumption. *Meat Science*, *74*(1), 149–160. <https://doi.org/10.1016/j.meatsci.2006.04.016>
- Guest, G., Namey, E., & McKenna, K. (2017). How Many Focus Groups Are Enough? Building an Evidence Base for Nonprobability Sample Sizes. *Field Methods*, *29*(1), 3–22. <https://doi.org/10.1177/1525822X16639015>
- Hagmann, D., Siegrist, M., & Hartmann, C. (2019). Meat avoidance: Motives, alternative proteins and diet quality in a sample of Swiss consumers. *Public Health Nutrition*, *22*(13), 2448–2459. <https://doi.org/10.1017/S1368980019001277>
- Happer, C., & Wellesley, L. (2019). Meat consumption, behaviour and the media environment: A focus group analysis across four countries. *Food Security*, *11*(1), 123–139. <https://doi.org/10.1007/s12571-018-0877-1>
- Haverstock, K., & Forgays, D. K. (2012). To eat or not to eat. A comparison of current and former animal product limiters. *Appetite*, *58*(3), 1030–1036.
- Hendricks, C. (2018). Veganwashing and the Lie of Vegan Unity. *Collectively Free*. <https://www.collectivelyfree.org/veganwashing-the-lie-of-vegan-unity/>

- Hobbs, J. E., & Goddard, E. (2015). Consumers and trust. *Food Policy*, 52, 71–74.
<https://doi.org/10.1016/j.foodpol.2014.10.017>
- Hoek, A. C., Luning, P. A., Stafleu, A., & de Graaf, C. (2004). Food-related lifestyle and health attitudes of Dutch vegetarians, non-vegetarian consumers of meat substitutes, and meat consumers. *Appetite*, 42(3), 265–272.
<https://doi.org/10.1016/j.appet.2003.12.003>
- Hoek, A. C., Luning, P. A., Weijzen, P., Engels, W., Kok, F. J., & de Graaf, C. (2011). Replacement of meat by meat substitutes. A survey on person- and product-related factors in consumer acceptance. *Appetite*, 56(3), 662–673.
<https://doi.org/10.1016/j.appet.2011.02.001>
- Hoek, A. C., van Boekel, M. A. J. S., Voordouw, J., & Luning, P. A. (2011). Identification of new food alternatives: How do consumers categorize meat and meat substitutes? *Food Quality and Preference*, 22(4), 371–383.
<https://doi.org/10.1016/j.foodqual.2011.01.008>
- James, L. (2019, September 19). Impossible Burger To Finally Make Its Grocery Store Debut—But Will Excitement Match Its Burger King Launch? *Forbes*.
<https://www.forbes.com/sites/laurajames/2019/09/19/will-impossible-burgers-grocery-store-debut-match-its-burger-king-launch/?sh=b209c403143e>
- Junor, A. (2016). The meat and veg complex: Food and national progress in Australian print media, 1930–1965. *History Australia*, 13(4), 474–489.
<https://doi.org/10.1080/14490854.2016.1231162>
- Kalocsay, K., King, T., Lichtenstein, T., & Weber, J. (2020). *Plant-Based Meat: A Healthier Choice?* (p. 63). Food Frontier.
- Kemper, J. (2020). Motivations, barriers, and strategies for meat reduction at different family lifecycle stages. *Appetite*, 104644.

- Köster, E. P., & Mojet, J. (2007). Theories of food choice development. In *Understanding Consumers of Food Products* (pp. 93–124). Elsevier.
<https://doi.org/10.1533/9781845692506.1.93>
- Kyriakopoulou, K., Dekkers, B., & van der Goot, A. J. (2019). Plant-Based Meat Analogues. In *Sustainable Meat Production and Processing* (pp. 103–126). Elsevier.
<https://doi.org/10.1016/B978-0-12-814874-7.00006-7>
- Lemken, D., Spiller, A., & Schulze-Ehlers, B. (2019). More room for legume – Consumer acceptance of meat substitution with classic, processed and meat-resembling legume products. *Appetite*, *143*, 104412. <https://doi.org/10.1016/j.appet.2019.104412>
- Lentz, G., Connelly, S., Miroso, M., & Jowett, T. (2018). Gauging attitudes and behaviours: Meat consumption and potential reduction. *Appetite*, *127*, 230–241.
<https://doi.org/10.1016/j.appet.2018.04.015>
- Malav, O. P., Talukder, S., Gokulakrishnan, P., & Chand, S. (2015). Meat Analog: A Review. *Critical Reviews in Food Science and Nutrition*, *55*(9), 1241–1245.
<https://doi.org/10.1080/10408398.2012.689381>
- Markowski, K. L., & 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.
- Martin, C., Lange, C., & Marette, S. (2021). Importance of additional information, as a complement to information coming from packaging, to promote meat substitutes: A case study on a sausage based on vegetable proteins. *Food Quality and Preference*, *87*, 104058. <https://doi.org/10.1016/j.foodqual.2020.104058>
- Mathur, M. B., Robinson, T. N., Reichling, D. B., Gardner, C. D., Nadler, J., Bain, P. A., & Peacock, J. (2020). Reducing meat consumption by appealing to animal welfare:

- Protocol for a meta-analysis and theoretical review. *Systematic Reviews*, 9(1), 3.
<https://doi.org/10.1186/s13643-019-1264-5>
- McBey, D., Watts, D., & Johnstone, A. M. (2019). Nudging, formulating new products, and the lifecourse: A qualitative assessment of the viability of three methods for reducing Scottish meat consumption for health, ethical, and environmental reasons. *Appetite*, 142, 104349. <https://doi.org/10.1016/j.appet.2019.104349>
- McIlveen, H., Abraham, C., & Armstrong, G. (1999). Meat avoidance and the role of replacers. *Nutrition & Food Science*, 99(1), 29–36.
<https://doi.org/10.1108/00346659910247653>
- Michel, F., Hartmann, C., & Siegrist, M. (2021). Consumers' associations, perceptions and acceptance of meat and plant-based meat alternatives. *Food Quality and Preference*, 87, 104063. <https://doi.org/10.1016/j.foodqual.2020.104063>
- Mizutani, N., Okamoto, M., Yamaguchi, Y., Kusakabe, Y., Dan, I., & Yamanaka, T. (2010). Package images modulate flavor perception for orange juice. *Food Quality and Preference*, 21(7), 867–872. <https://doi.org/10.1016/j.foodqual.2010.05.010>
- Morgan, D. L. (1996). Focus Groups. *Annual Review of Sociology*, 22(1), 129–152.
<https://doi.org/10.1146/annurev.soc.22.1.129>
- Namugayi, D. (2014). *Social and Cultural Drivers of Meat Consumption among Mexican-American Millennials in Tempe, AZ* [Arizona State University]. <https://search-proquest-com.ezproxy.auckland.ac.nz/docview/1640883600?pq-origsite=primo>
- Nath, J., & Prideaux, D. (2011). The Civilised Burger: Meat Alternatives as a Conversion Aid and Social Instrument for Australian Vegetarians and Vegans. *Australian Humanities Review*, 51. <https://doi.org/10.22459/AHR.51.2011.09>

- Nicolosi, A., Laganà, V. R., Laven, D., Marcianò, C., & Skoglund, W. (2019). Consumer Habits of Local Food: Perspectives from Northern Sweden. *Sustainability*, *11*(23), 6715. <https://doi.org/10.3390/su11236715>
- North, K., & Emmett, P. (2000). Multivariate analysis of diet among three-year-old children and associations with socio-demographic characteristics. *European Journal of Clinical Nutrition*, *54*(1), 73–80. <https://doi.org/10.1038/sj.ejcn.1600896>
- Nowell, L. S., Norris, J. M., White, D. E., & Moules, N. J. (2017). Thematic Analysis: Striving to Meet the Trustworthiness Criteria. *International Journal of Qualitative Methods*, *16*(1), 160940691773384. <https://doi.org/10.1177/1609406917733847>
- OECD. (2021). *Meat consumption 2021* [Data set]. OECD. <https://doi.org/10.1787/fa290fd0-en>
- OECD/FAO. (2020). *OECD-FAO Agricultural Outlook 2020-2029* [Data set]. OECD Publishing. <https://doi.org/10.1787/agr-outl-data-en>
- Parker, C., Scott, S., & Geddes, A. (2019). Snowball Sampling. In P. Atkinson, S. Delamont, A. Cernat, J. W. Sakshaug, & R. A. Williams (Eds.), *SAGE Research Methods Foundations*. SAGE Publications Ltd. <https://doi.org/10.4135/9781526421036831710>
- Piper, K. (2021, February 20). The rise of meatless meat, explained. *The Rise of Meatless Meat, Explained*. <https://www.vox.com/2019/5/28/18626859/meatless-meat-explained-vegan-impossible-burger>
- Potts, A., & White, M. (2008). New Zealand Vegetarians: At Odds with Their Nation. *Society & Animals*, *16*(4), 336–353. <https://doi.org/10.1163/156853008X357667>
- Reed, D. D., Kaplan, B. A., & Brewer, A. T. (2012). Discounting the freedom to choose: Implications for the paradox of choice. *Behavioural Processes*, *90*(3), 424–427. <https://doi.org/10.1016/j.beproc.2012.03.017>

- Reybold, L. E., Lammert, J. D., & Stribling, S. M. (2013). Participant selection as a conscious research method: Thinking forward and the deliberation of ‘Emergent’ findings. *Qualitative Research, 13*(6), 699–716.
<https://doi.org/10.1177/1468794112465634>
- Richardson, N. J., MacFie, H. J. H., & Shepherd, R. (1994). Consumer attitudes to meat eating. *Meat Science, 36*(1–2), 57–65. [https://doi.org/10.1016/0309-1740\(94\)90033-7](https://doi.org/10.1016/0309-1740(94)90033-7)
- Rohani, L. S., Aung, M., & Rohani, K. (2014). One step closer to the field: Visual methods in marketing and consumer research. *Qualitative Market Research: An International Journal, 17*(4), 300–318. <https://doi.org/10.1108/QMR-08-2012-0039>
- Rosenfeld, D. L. (2018). The psychology of vegetarianism: Recent advances and future directions. *Appetite, 131*, 125–138. <https://doi.org/10.1016/j.appet.2018.09.011>
- Ruby, M. B., & Heine, S. J. (2011). Meat, morals, and masculinity. *Appetite, 56*(2), 447–450. <https://doi.org/10.1016/j.appet.2011.01.018>
- Ruby, M. B., Heine, S. J., Kamble, S., Cheng, T. K., & Waddar, M. (2013). Compassion and contamination. Cultural differences in vegetarianism. *Appetite, 71*, 340–348. <https://doi.org/10.1016/j.appet.2013.09.004>
- Schickenberg, B., van Assema, P., Brug, J., & de Vries, N. (2008). Are the Dutch acquainted with and willing to try healthful food products? The role of food neophobia. *Public Health Nutrition, 11*(5), 493–500. <https://doi.org/10.1017/S1368980007000778>
- Schifferstein, H. N. J., Fenko, A., Desmet, P. M. A., Labbe, D., & Martin, N. (2013). Influence of package design on the dynamics of multisensory and emotional food experience. *Food Quality and Preference, 27*(1), 18–25. <https://doi.org/10.1016/j.foodqual.2012.06.003>

- Siegrist, M., & Hartmann, C. (2019). Impact of sustainability perception on consumption of organic meat and meat substitutes. *Appetite*, *132*, 196–202.
<https://doi.org/10.1016/j.appet.2018.09.016>
- Siegrist, M., Hartmann, C., & Keller, C. (2013). Antecedents of food neophobia and its association with eating behavior and food choices. *Food Quality and Preference*, *30*(2), 293–298. <https://doi.org/10.1016/j.foodqual.2013.06.013>
- Skjott Linneberg, M., & Korsgaard, S. (2019). Coding qualitative data: A synthesis guiding the novice. *Qualitative Research Journal*, *19*(3), 259–270.
<https://doi.org/10.1108/QRJ-12-2018-0012>
- Sobal, J. (2005). MEN, MEAT, AND MARRIAGE: MODELS OF MASCULINITY. *Food and Foodways*, *13*(1–2), 135–158. <https://doi.org/10.1080/07409710590915409>
- Sobal, J., & Bisogni, C. A. (2009). Constructing Food Choice Decisions. *Annals of Behavioral Medicine*, *38*(S1), 37–46. <https://doi.org/10.1007/s12160-009-9124-5>
- Stehfest, E. (2014). Food choices for health and planet. *Nature*, *515*(7528), 501–502.
<https://doi.org/10.1038/nature13943>
- Stehfest, E., Bouwman, L., van Vuuren, D. P., den Elzen, M. G. J., Eickhout, B., & Kabat, P. (2009). Climate benefits of changing diet. *Climatic Change*, *95*(1–2), 83–102.
<https://doi.org/10.1007/s10584-008-9534-6>
- Stoll-Kleemann, S., & O’Riordan, T. (2015). The Sustainability Challenges of Our Meat and Dairy Diets. *Environment: Science and Policy for Sustainable Development*, *57*(3), 34–48. <https://doi.org/10.1080/00139157.2015.1025644>
- Stoll-Kleemann, S., & Schmidt, U. J. (2017). Reducing meat consumption in developed and transition countries to counter climate change and biodiversity loss: A review of influence factors. *Regional Environmental Change*, *17*(5), 1261–1277.
<https://doi.org/10.1007/s10113-016-1057-5>

- Tosun, P., Yanar, M., Sezgin, S., & Uray, N. (2020). Meat Substitutes in Sustainability Context: A Content Analysis of Consumer Attitudes. *Journal of International Food & Agribusiness Marketing*, 1–23. <https://doi.org/10.1080/08974438.2020.1840475>
- Vandenbroele, J., Slabbinck, H., Van Kerckhove, A., & Vermeir, I. (2019). Mock meat in the butchery: Nudging consumers toward meat substitutes. *Organizational Behavior and Human Decision Processes*.
- Verbeke, W. (2015). Profiling consumers who are ready to adopt insects as a meat substitute in a Western society. *Food Quality and Preference*, 39, 147–155. <https://doi.org/10.1016/j.foodqual.2014.07.008>
- Vollstedt, M., & Rezat, S. (2019). An Introduction to Grounded Theory with a Special Focus on Axial Coding and the Coding Paradigm. In N. Presmeg & G. Kaiser, *Compendium for Early Career Researchers in Mathematics Education*. <https://www.doabooks.org/doab?func=fulltext&rid=43695>
- Vredenburg, J., Kapitan, S., Spry, A., & Kemper, J. A. (2020). Brands taking a stand: Authentic brand activism or woke washing? *Journal of Public Policy & Marketing*, 39(4), 444–460.
- Weinrich, R. (2018). Cross-Cultural Comparison between German, French and Dutch Consumer Preferences for Meat Substitutes. *Sustainability; Basel*, 10(6), 1819. <http://dx.doi.org.ezproxy.auckland.ac.nz/10.3390/su10061819>
- Ye, T., & Mattila, A. S. (2021). The effect of ad appeals and message framing on consumer responses to plant-based menu items. *International Journal of Hospitality Management*, 95, 102917.